CDP-552ESD/650ESD

SERVICE MANUAL

CDP-650ESD:
US Model

CDP-552ESD:
AEP Model
UK Model

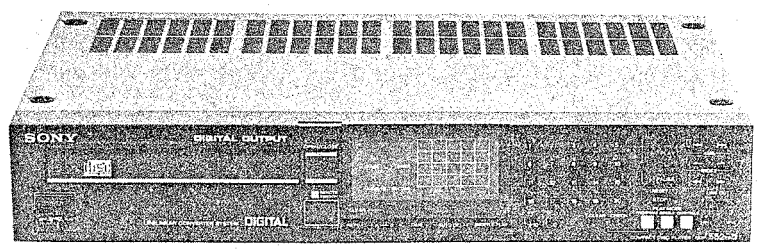


Photo: CDP-552ESD

SPECIFICATIONS

System	Compact disc digital audio system
Disc	Compact disc
Laser	Semiconductor laser (λ = 780 nm)
Laser output	Max.0.6 mW *
	*This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.
Spindle speed	200 r.p.m. to 500 r.p.m. (CLV)
Scan velocity	1.2 – 1.4 m/sec.
Error correction	Sony Super Strategy Cross Interleave Reed Solomon Code
Number of channels	2
D-A conversion	16-bit linear
Frequency response	2 – 20,000 Hz ±0.3 dB
Harmonic distortion	Less than 0.0025% (1 kHz)
Dynamic range	More than 96 dB
Channel separation	More than 95 dB
Wow and flutter	Below measurable limit
Outputs	Line outputs FIXED (phono jacks) Output level 2 V rms (at MSB) Load impedance over 10 kilohms VARIABLE (phono jacks) Max. output level 2 V rms (at MSB) Load impedance over 50 kilohms DIGITAL OUT (phono jack) Max. output level 0.5 V p-p Load impedance 75 ohms

Disc

Track pitch	1.6 μm
Sampling frequency	44.1 kHz
Quantization	16 bit linear quantizing/channel
Modulation system	EFM
Transfer rate	2.03 Mbit/sec. (before modulation)

General

Power requirements	CDP-552ESD AEP Model: 220 V ac UK Model: 240 V ac CDP-650ESD US Model: 120 V ac, 60 Hz
Power consumption	16 W
Dimensions	Approx. 430 × 80 × 365 mm (w/h/d) (17 × 3 1/4 × 14 3/8 inches) including projecting parts and controls Approx. 430 × 96 × 365 mm (w/h/d) (17 × 3 7/8 × 14 3/8 inches) including projecting parts and controls and insulators
Weight	Approx. 9.0 kg (19 lbs 14 oz), net Approx. 10.4 kg (22 lb 15 oz) including insulators

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MICROFILM

COMPACT DISK PLAYER

SONY®

AUD

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 nm
   - Emission Duration: continuous
   - Laser Output: max. 0.6 mW*

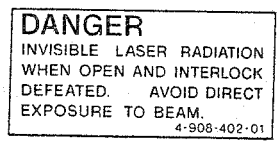
     * This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.
   - Classification: Class IIIb
2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

LASER WARNING LABELS

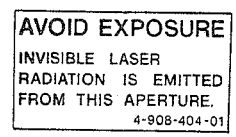
The labels shown below are affixed.

1. Protective Housing Label
   DHHS Non-Interlocked Protective Housing Label ..... (US model)

2. Interlock defeatable Label ..... (US model)

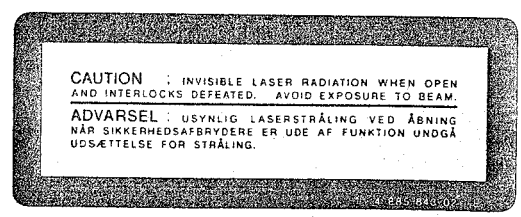


2. Aperture Label..... (AEP, UK model)

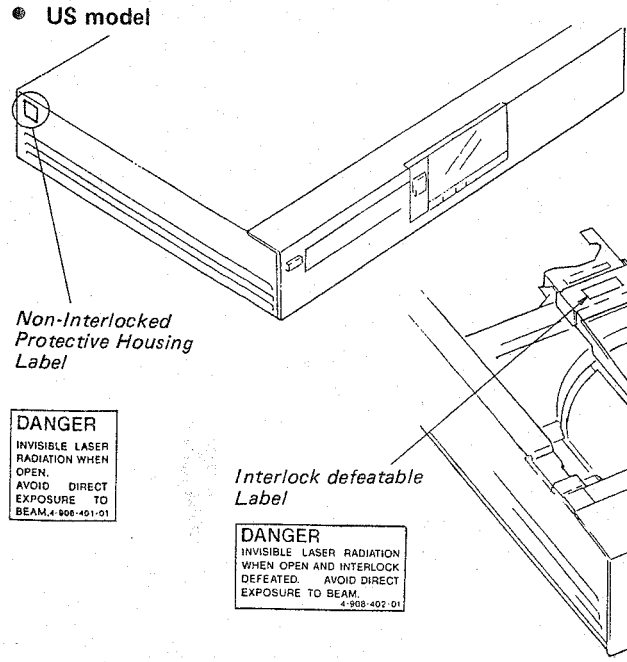


- See figure on next page for location of label.

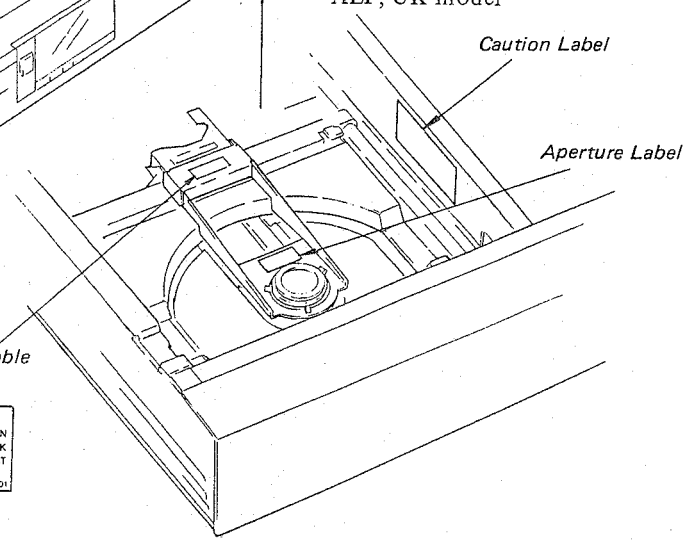
3. Caution Label ..... (AEP, UK model)


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.

- **US model**


Non-Interlocked Protective Housing Label
DANGER
INVISIBLE LASER RADIATION WHEN OPEN.
AVOID DIRECT EXPOSURE TO BEAM.4-908-401-01
Interlock defeatable Label
DANGER
INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.
4-908-402-01

- AEP, UK model



BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 30 cm fra den optiske pick-up.

1. Data for Laser Diode
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstråling: Kontinuerlig
   - Laser Output: max. 0.6 mW*

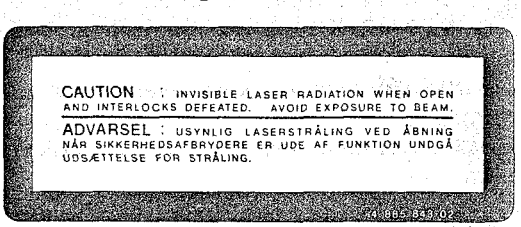
     * målt i 1.6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhsd.
   - Klassifikation: Svarende til klasse IIIb

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

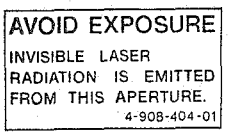
LASER ADVARSEL MÆRKNING (AEP model)

Følgende mærkning findes indvendig i apparatet:

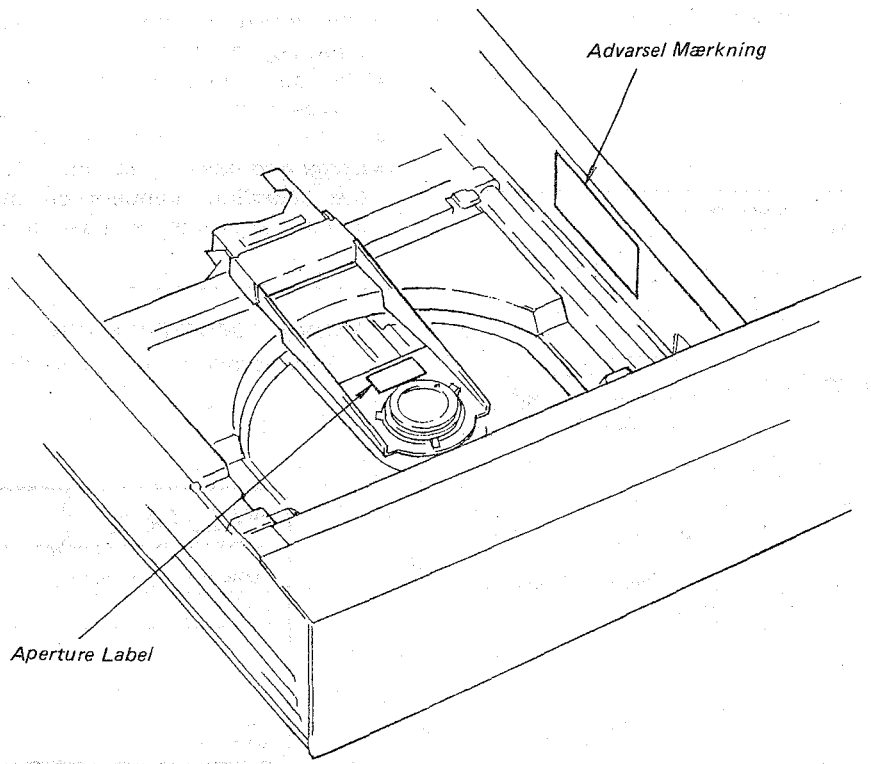
1. Advarsel Mærkning


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.

2. Aperture Label



- **AEP, UK model**



SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

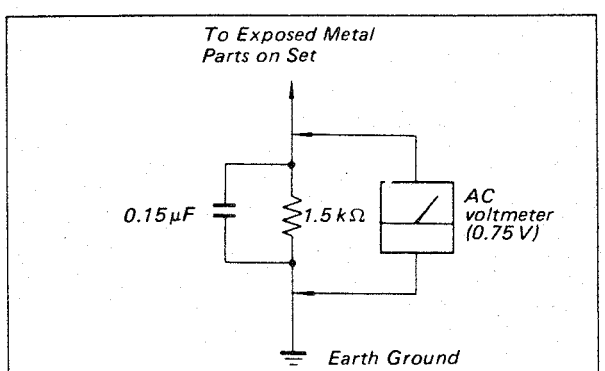


Fig. A. Using an AC voltmeter to check AC leakage.

FEATURES

With the CDP-650ESD flat frequency response (2 - 20,000 Hz), low wow and flutter (lower than the measurable limit), wide dynamic range (more than 96 dB), minimal distortion (0.0025 %) and high channel separation (more than 95 dB) are achieved.

Digital signal output
In addition to the output of the analog signals converted back with high fidelity by laser beam, direct digital signal output is provided, allowing connection of an external D/A converter for the highest possible sound quality.

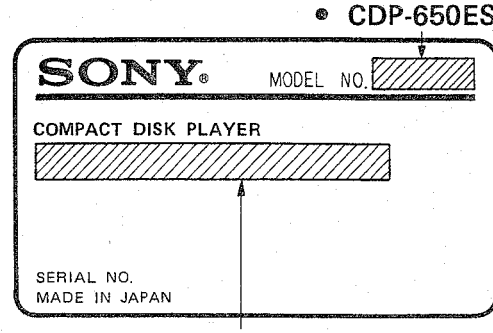
Quick operation
- Feather-touch function keys for direct mode change.
- Linear motor for quick selection search.

Multi-functional
- A variety of playing modes: In the PROGRAM mode the desired selections can be played back in any desired sequence. In the CONTINUE mode playback is continuous from the desired selection to the end of the disc. In the SINGLE mode only one selection is played back.
- The shuffle-play function plays selections back in random order.
- The AMS (Automatic Music Sensor) for quick selection location
- The index function allows you to locate quickly the part you want.
- The repeat function allows you to repeat play continuously in any mode.
- The auto delay function allows you to delay the playback of the first selection 2 seconds.
- An RM-D502 Remote Commander supplied.
- Large and easy-to-read music calendar display shows the selection numbers on the disc and the time counter shows the elapsed or remaining playing time.

MODEL IDENTIFICATION

-- Specification Label on Jack Plate --

- CDP-552ESD
- CDP-650ESD



- **CDP-552ESD** AEP model: AC: 220 V
  UK model: AC: 240 V
- **CDP-650ESD** US model: AC: 120 V 60 Hz

— CAUTION FOR ELECTROSTATIC BREAKDOWN —

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (BU-1)

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

The printed matter below is included in the repair parts. During repair, use the procedure in the printed matter.

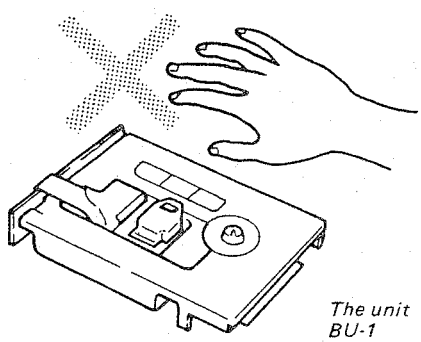
The following method is an example for reference purposes:

1. Place a conductive sheet on the workbench. (The black sheet used as repair parts wrapping).
2. Place the set on the conductive sheet so that the chassis touches the sheet. (This makes it the same potential as the conductive sheet).
3. Place your hands on the conductive sheet. (This makes them the same potential as the sheet).
4. Remove the optical pick-up block.
5. Perfrom work on top of the conductive sheet. Be careful that clothing does not touch the optical pick-up block.

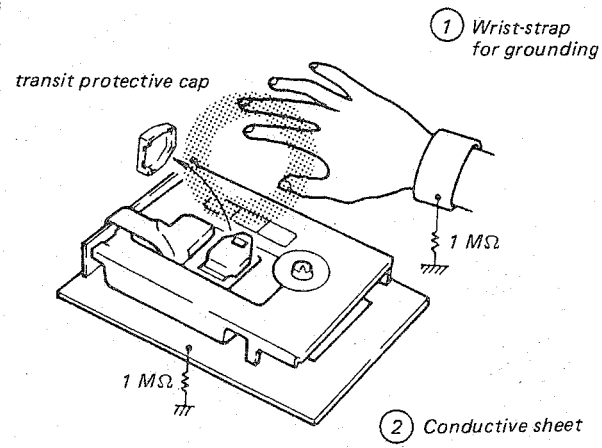
Printed Matter Included in the Repair Parts

When opening or repairing a BU-1, the procedure for grounding as follows is required to prevent damage caused by static electricity.

1. Grounding for the human body.
   Be sure to put on a wrist-strap for grounding (with impedance lower than $10^8\,\Omega$) whose other end is grounded
   The strap works to drain away the static electricity built-up on the human body.
2. Grounding for the work table.
   Be sure to lay on the table a cunductive sheet (with impedance lower than $10^9\,\Omega$) such as sheet of copper which is grounded.
3. As static electricity built-up on clothes is not drained away, be careful not to let your clothes touch the BU-1.



The unit BU-1

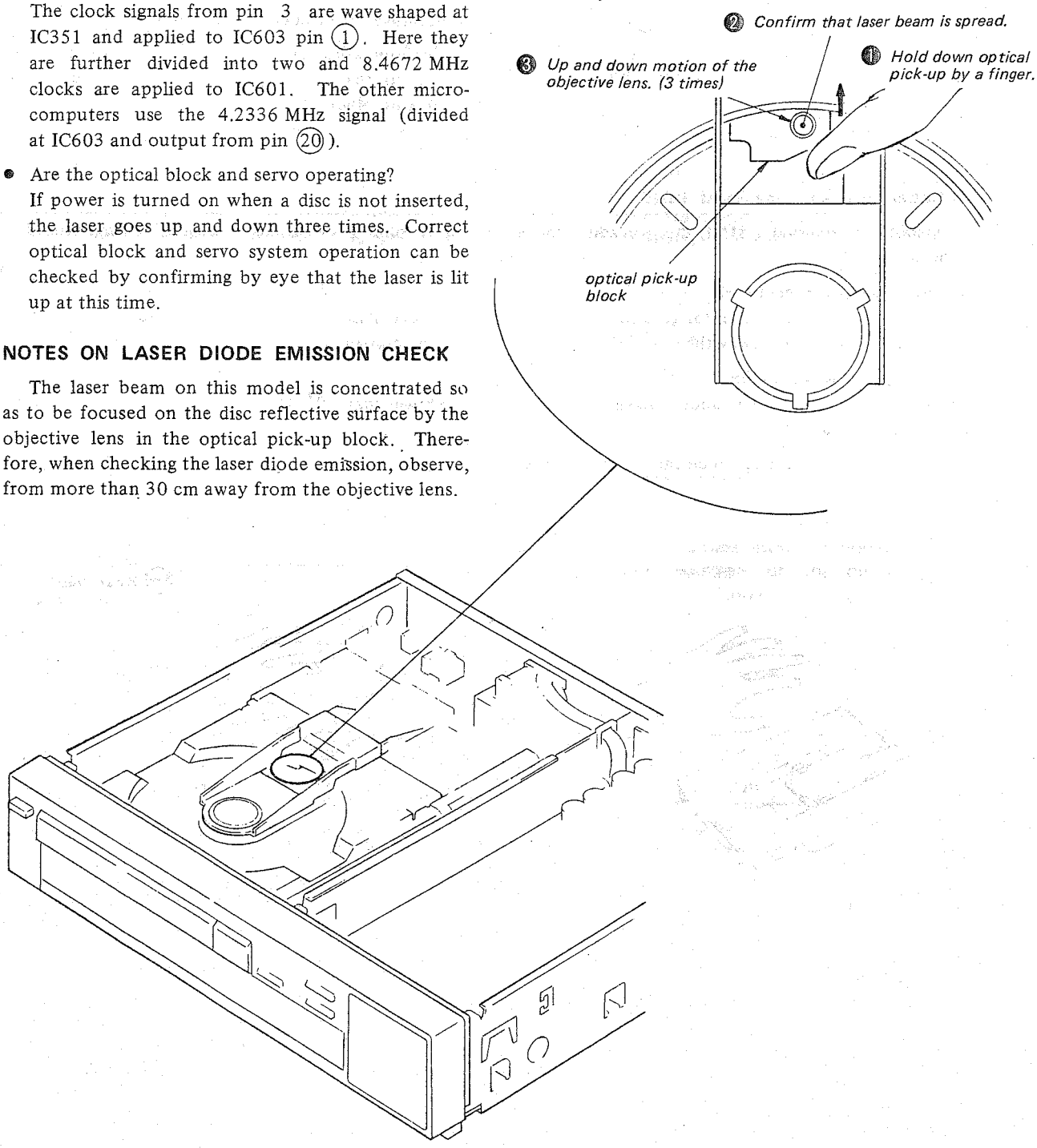


NOTE ON REPAIR

- Are reset signals applied to each IC?
  During power ON, a "L" signal is made momentarily at R999 and C995 and applied to the RESET pin of each IC. During power OFF, a "L" signal is made by Q991.
- Are clock signals applied to each IC?
  The microcomputer clocks except for remote control are made at IC352 (67.7376 MHz) and then divided into ④(16.9344 MHz) and output from pin ③.
  The clock signals from pin 3 are wave shaped at IC351 and applied to IC603 pin ①. Here they are further divided into two and 8.4672 MHz clocks are applied to IC601. The other microcomputers use the 4.2336 MHz signal (divided at IC603 and output from pin ⑳).
- Are the optical block and servo operating?
  If power is turned on when a disc is not inserted, the laser goes up and down three times. Correct optical block and servo system operation can be checked by confirming by eye that the laser is lit up at this time.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe, from more than 30 cm away from the objective lens.


❷ Confirm that laser beam is spread.
❸ Up and down motion of the objective lens. (3 times)
❶ Hold down optical pick-up by a finger.
optical pick-up block

LOCATION AND FUNCTION OF CONTROLS

Front panel

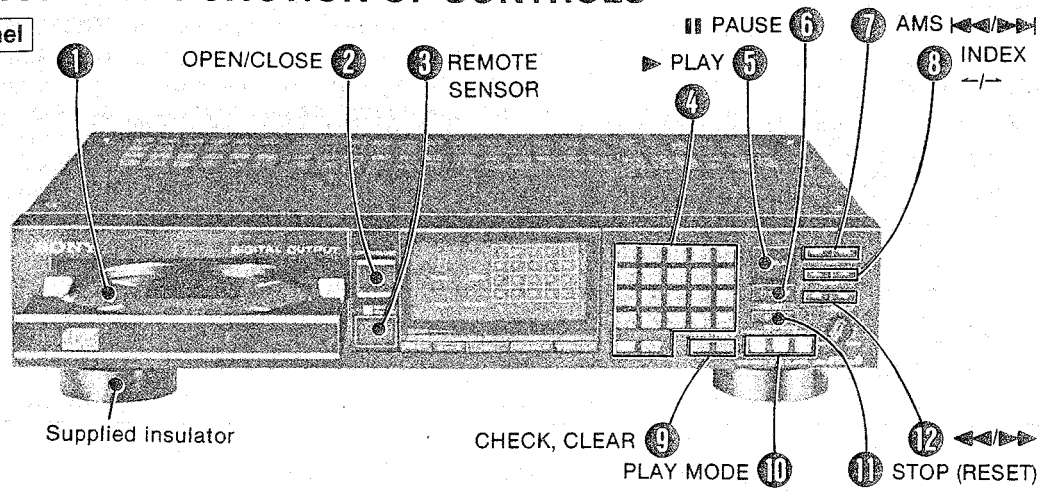


Photo: CDP-650ESD

❶ Disc compartment
The disc compartment opens when the OPEN/CLOSE key is pressed. The disc compartment can be closed by pressing the front of it lightly, by pressing the OPEN/CLOSE key again or by pressing the ▶ PLAY key.

❷ OPEN/CLOSE key
The disc compartment opens when this key is pressed, and closes when it is pressed again.

❸ REMOTE SENSOR and indicator
The signal transmitted by the supplied RM-D502 Remote Commander is received here. The indicator blinks to indicate that a function key on the Remote Commander has been pressed.

❹ Direct selection keys
The keys numbered [1] – [20], [+10] and [0] are used to select the desired selection directly by number. Except during the PROGRAM mode (page 15), the selection will begin to play when the numbered key is pressed.

❺ ▶ PLAY key
Press to start disc play. The ▶ indicator will light up during play.

❻ II PAUSE key
Press to pause during play. The II indicator will light up.
To release the pause mode, press this key again. The II indicator will go off and play will resume.

❼ AMS (Automatic Music Sensor) keys
The desired selection can be located by pressing one of these keys during play or during pause.
|◀◀: Press once to go back to the beginning of the selection being played. To go back to the previous selection, press two times, and so on.
▶▶|: Press once to skip ahead to the beginning of the next selection. Press twice to skip to the following selection, and so on.

❽ INDEX keys
Press one of these keys to search for a particular index number (signals prerecorded on the disc, indicating divisions within a selection), to start play from the desired point within a selection. The index numbers are displayed in the display window.
←: Press once to return to the previous index number.
→: Press once to skip to the next index number.
If the key is pressed during playback of a disc on which no index numbers have been recorded, play will start from the beginning of the current selection.

❾ CHECK key, CLEAR key
CHECK: This key is for checking the order of the programmed selections.
CLEAR: In order to clear the programmed selections one by one, first display the selection number with the CHECK key, then press this key. Also, press this key to clear [+10] if it is pressed by mistake.

❿ PLAY MODE keys
CONTINUE: Press this key to play continuously from the first (or desired) to last selection, in order from the lowest number.
SINGLE: Press to play one selection only.
PROGRAM: Press to program the desired selections in the desired order continuously.

⓫ STOP (RESET) key
When this key is pressed during play, play will stop and the player will stand by, waiting for your instructions. All selection numbers are displayed in the display window and the TRACK and INDEX indicators show 0.

⓬ Manual search keys
These keys are used to search for a particular point. You can monitor the sound while going in fast forward or fast reverse during search.
◀◀: Keep pressed to go backwards at high speed.
▶▶: Keep pressed to go forward at high speed.

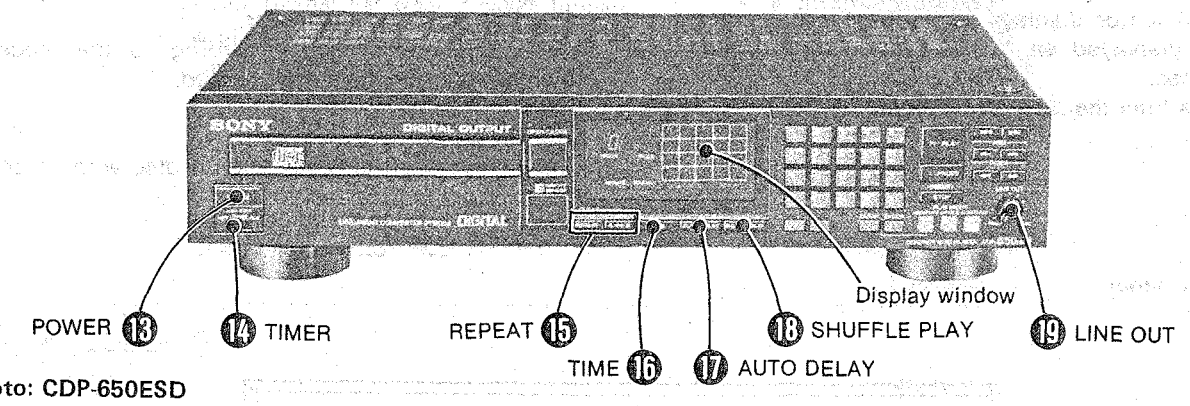


Photo: CDP-650ESD

⑬ POWER switch

⑭ TIMER switch
Using an optional timer, the player can be set to start playing automatically at a particular time.

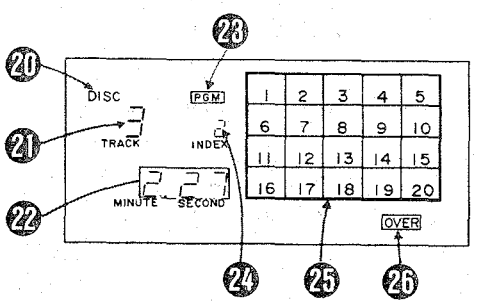
⑮ REPEAT key
Press to repeat play. There are five types of repeat play: one selection, all selections, A ↔ B , program and shuffle repeat. (See page 20.)

⑯ TIME (elapsed or remaining time) key
When this key is pressed during play, the time remaining for this selection or the time remaining on the disc is displayed.

⑰ AUTO DELAY key
When this key is pressed, two seconds of blank space are inserted before play of the first selection begins. This function is cancelled by pressing the key again.

⑱ SHUFFLE PLAY key
Selections are shuffled and played in a random order when this key is pressed. When all of the selections on the disc have been played once, the shuffle play is cancelled.

⑲ LINE OUT level control
This control adjusts the output levels for the LINE OUT VARIABLE jacks on the rear panel. Output level increases when it is turned to MAX. This control also turns automatically when operated using the supplied RM-D502 Remote Commander.



⑳ DISC indicator
This indicator lights up when the disc compartment is moving, when the disc compartment has closed with a disc in place and during disc playing.
You can tell whether a disc is inserted or not even when the disc compartment is closed by checking this indicator.

㉑ TRACK indicator
When the disc is inserted using the OPEN/CLOSE key or by pressing on the front of the disc compartment, **the number of selections on the disc** is displayed for several seconds. When play begins, **the number of the selection being played** is displayed. When the ▶▶ key is pressed continuously and you go past the end of the last selection, 77 is displayed.
If the ◀◀ key is kept pressed and you go past the beginning of the first selection, LL is displayed.

㉒ Time counter
When the disc is inserted and the disc compartment is closed, **the total time of all the selections on the disc** is displayed for several seconds. (When the ▶ PLAY key is used, this display does not appear.) When play begins, **the elapsed time the selection has been playing** is displayed.
When the TIME key is pressed, **the time remaining until the selection ends** is displayed after a minus "–" symbol. When this key is pressed again, **the play time remaining** is displayed after a minus symbol. The display varies depending on the setting of the PLAY MODE key and SHUFFLE PLAY key.

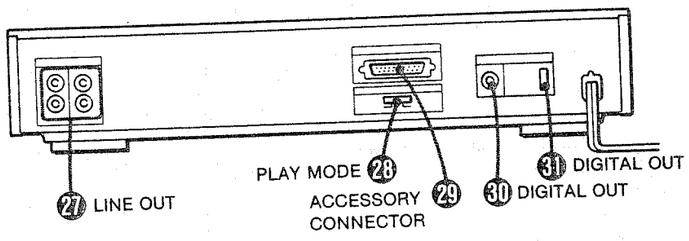
㉘ PGM indicator
This indicator lights up when the PLAY MODE PROGRAM key is pressed in stop mode, then goes out after the disc has begun to play.
The indicator also lights up when the programmed selections are being checked even during play.

㉔ INDEX indicator
This displays the index numbers of the selection being played. After programming but before play, or when checking the programmed selections, the INDEX indicator displays the order the selection currently displayed on the TRACK indicator was programmed.
(At this time the red PGM indicator lights up.)

㉕ Music calendar display window
When a disc is inserted and the player is on stand-by, the number of selections on the disc is displayed. For a disc with 21 or more selections, 1 – 20 light up, as well as the OVER indicator.
The display changes according to the mode and which function keys are pressed.

㉖ OVER indicator
This indicator lights up when a disc with 21 or more selections is inserted.

Rear panel



㉗ LINE OUT jacks
This unit is equipped with two pairs of LINE OUT jacks.
The FIXED jacks have a constant output level and the VARIABLE jacks output level can be changed with the LINE OUT level control.
The VARIABLE jacks are convenient to use for matching the playback sound levels of a tuner or other audio equipment and the CD player without having to adjust the volume control of the amplifier.
The VARIABLE jacks output level can be also adjusted with the supplied Remote Commander.

㉘ PLAY MODE initializing switch
This switch performs the same function as the PLAY MODE keys on the front panel. The setting of this switch—CONTINUE, SINGLE or PROGRAM—determines the mode when power is turned on, so set this switch to the mode most often used. After the power is turned on, change the mode with the PLAY MODE keys, as this switch does not work once the power is turned on.

㉙ ACCESSORY CONNECTOR
This connector can be used to connect an optional equipment which will be available in the future.

㉚ DIGITAL OUT jack
The digital signals (audio and subcode data) read from the disc are directly output from this jack.
Connect to the DIGITAL IN jack of the optional DAS-702ES DA converter unit.

㉛ DIGITAL OUT switch
This is used to select the output signal from the DIGITAL OUT jack. To make the most of this unit's performance, set the switch as follows:
ON: for audio and subcode data output
ON (FOR AUDIO USE): for audio data output only. When listening to music through the connected D/A converter unit, set to this position.
OFF: for no digital data output. When listening to music through the LINE OUT jacks, set to this position.

SECTION 1
OUTLINE

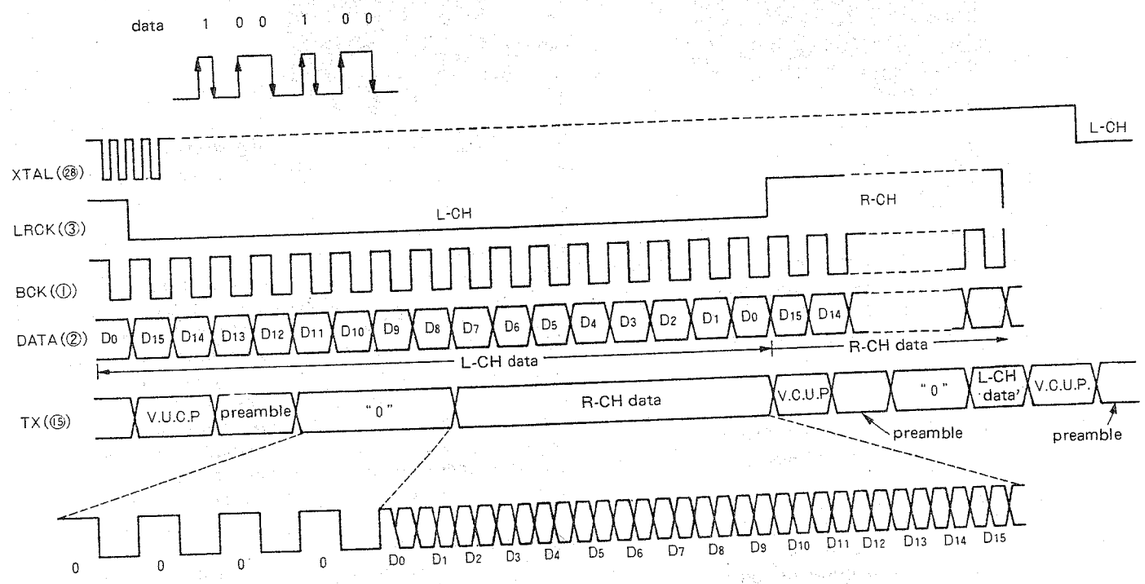
CIRCUIT DESCRIPTION

This set can output data read out from the compact disc as serial data.

This serial data further has what is called biphase modulation applied before it is output. Biphase modulation means that if data is "1" it is inverted twice, and if it is "0" it is inverted once.

As shown in the figure at the left, if data is 100100, when it is "1", it is inverted twice, going ⊓⊔, from "L" to "H" and from "H" to "L". When it is "0", it is inverted only once, from "L" to "H" or from "H" to "L".

This type of modulation is applied, and output is as serial data. The structure of the serial data is as follows.



The CD data is 16-bit data, but since the serial data output from IC751 (CX23033) is 24-bit structure, "0" is inserted for 8-bits.

Besides the actual data, there is a preamble signal which represents the beginning of the data, and also V.C.U.P. data, for a total of 32-bits.

V: Validity Flag. Goes high when data is being interpolated, etc. or undergoing other processing.

C: Channel Status Data. This can be divided into the following five types:
1. 2-CH or 4-CH data
2. Copy permission, etc.
3. Presence of emphasis
4. PCM or CD
5. Information on whether data is L-CH or R-CH

U: User Definable Data. P, Q, R, etc. subcode data.

P: Parity Flag. Makes the number of "H" for one word of data even.

These data are transmitted as serial data.

L-CH data is taken in when LRCK is low, and when it is high (R-CH), a signal with structure as shown above is output.

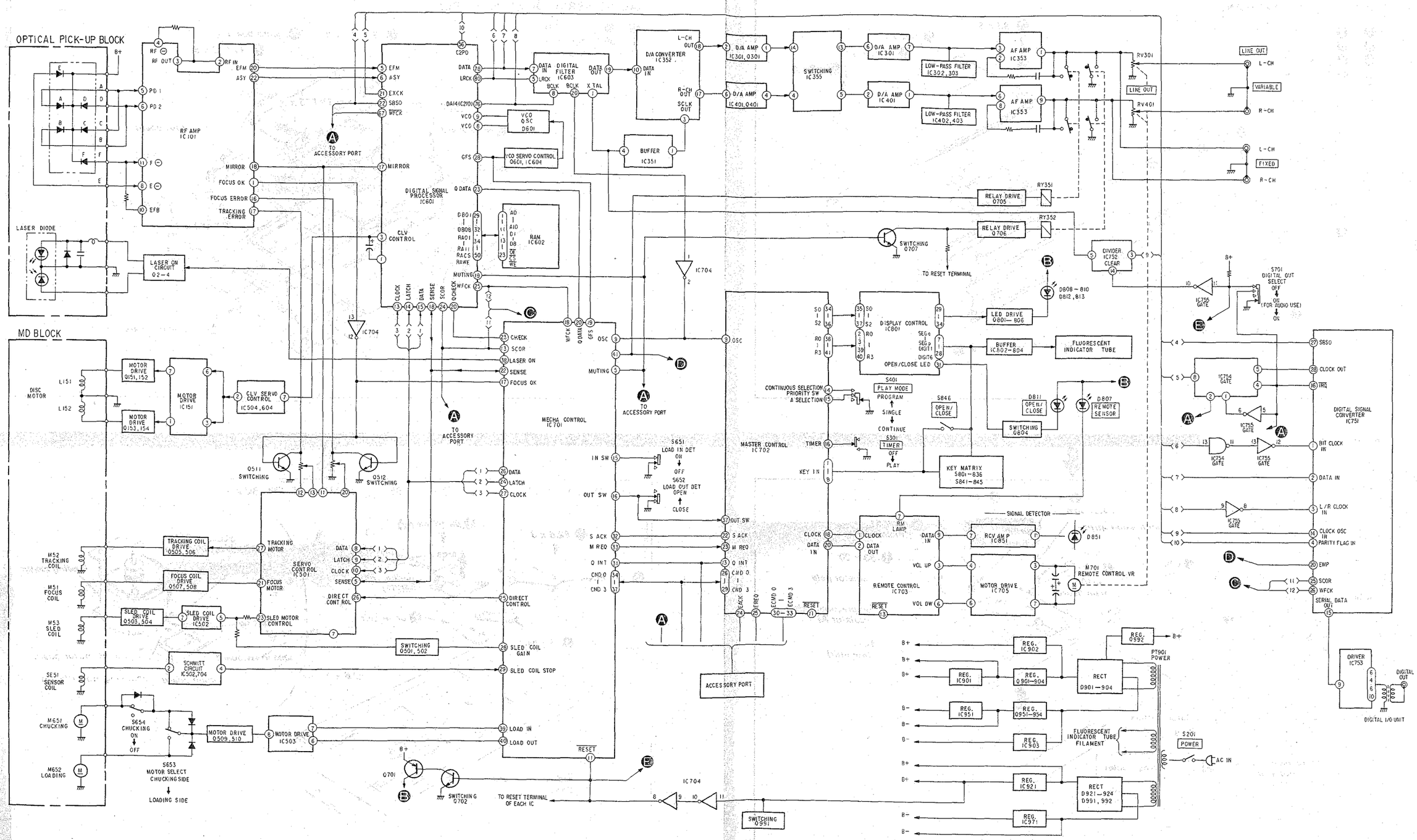
The above operations are all performed by IC751 (CX23033). CX23033 is an IC which converts digital audio data input from compact disc, PCM tuner and other digital audio equipment, along with channel status data and flag data into a digital audio interface fromat designed by Phillips and Sony.

This IC can be used in 4 modes, from 0 to 3, and the mode is switched depending on the equipment which is connected.

Mode 2 is used on this model.

CDP-552ESD/650ESD

SECTION 2
BLOCK DIAGRAM



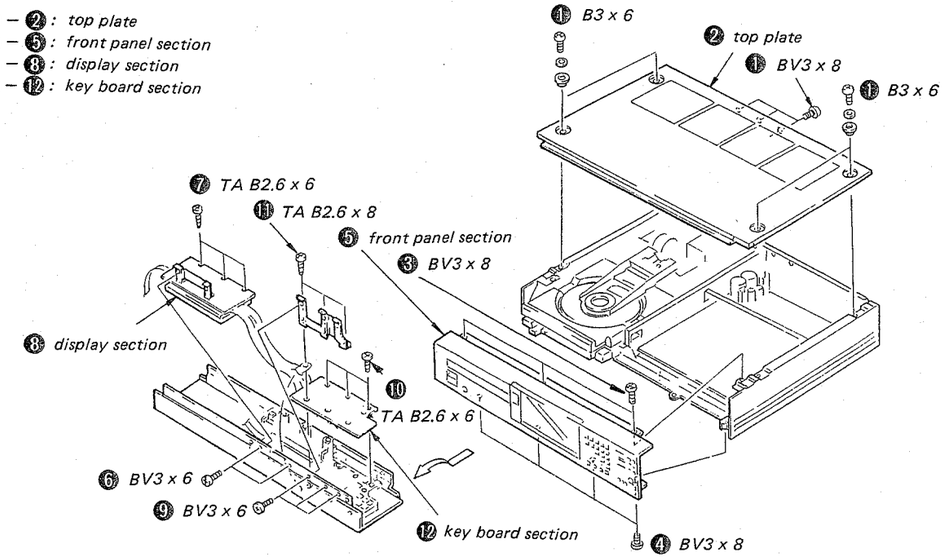
SECTION 3
DISASSEMBLY

3-1. DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

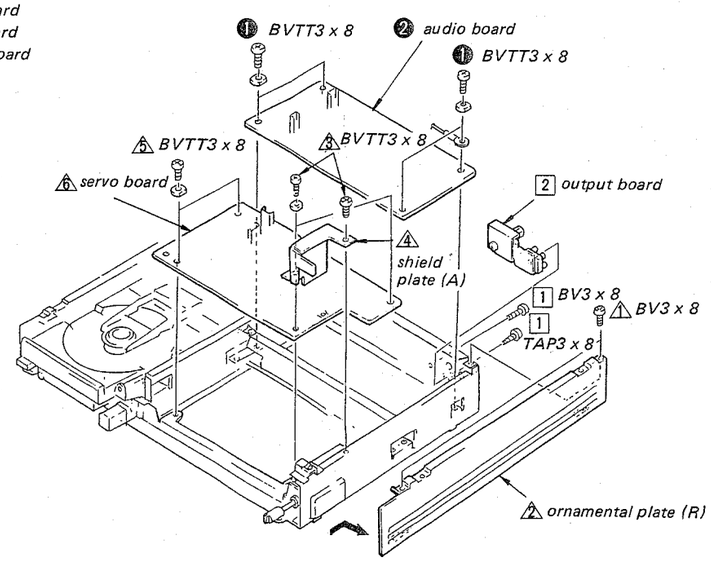
TOP PLATE/FRONT PANEL

❶ – ❷ : top plate
❸ – ❺ : front panel section
❻ – ❽ : display section
❾ – ⓬ : key board section


❶ B3 x 6
❷ top plate
❶ BV3 x 8
❶ B3 x 6
❼ TA B2.6 x 6
⓫ TA B2.6 x 8
❺ front panel section
❸ BV3 x 8
❽ display section
❿ TA B2.6 x 6
❻ BV3 x 6
❾ BV3 x 6
⓬ key board section
❹ BV3 x 8

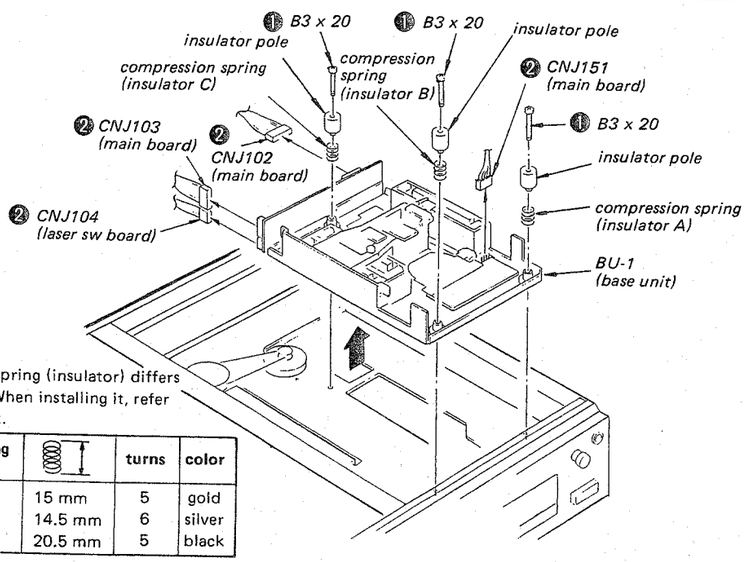
AUDIO/SERVO/OUTPUT BOARD

❶ – ❷ : audio board
⚠ – ⚠ : servo board
1 – 2 : output board



● Remove bottom plate.

BU-1 (BASE UNIT)

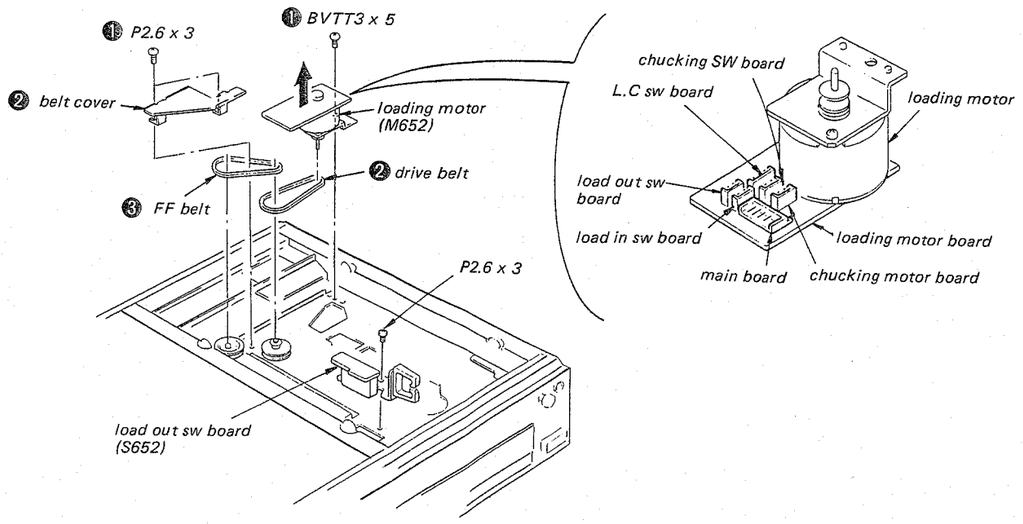


Note (1): When replacing BU-1, refer to "NOTES ON HANDLING BU-1 (BASE UNIT) on page 5 to prevent damage caused by static electricity.

Note (2): Each compression spring (insulator) differs in size and turns. When installing it, refer to the following list.

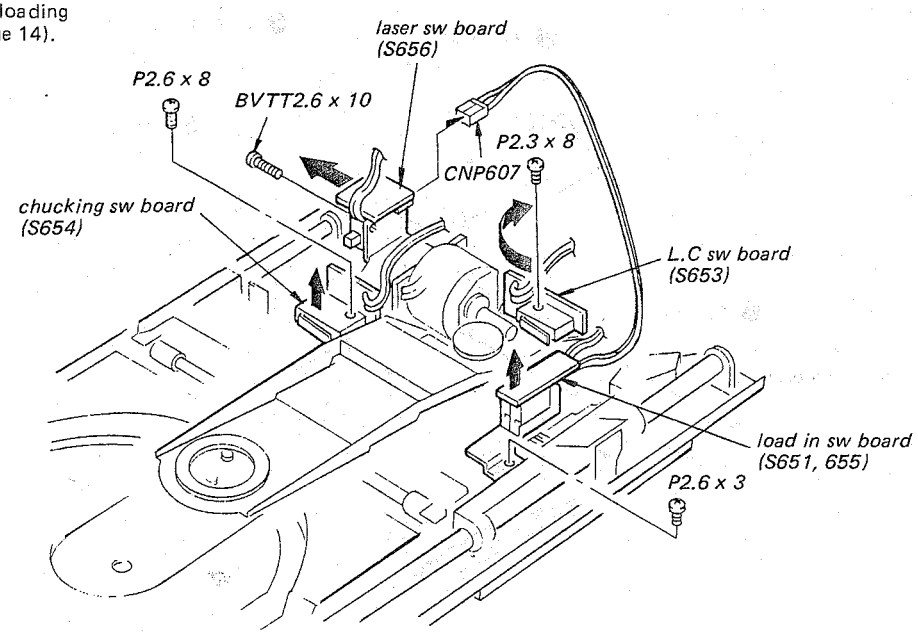
compression spring (insulator)		turns	color
A	15 mm	5	gold
B	14.5 mm	6	silver
C	20.5 mm	5	black

LOADING MOTOR, FF BELT, DRIVE BELT, LOAD OUT SW BOARD

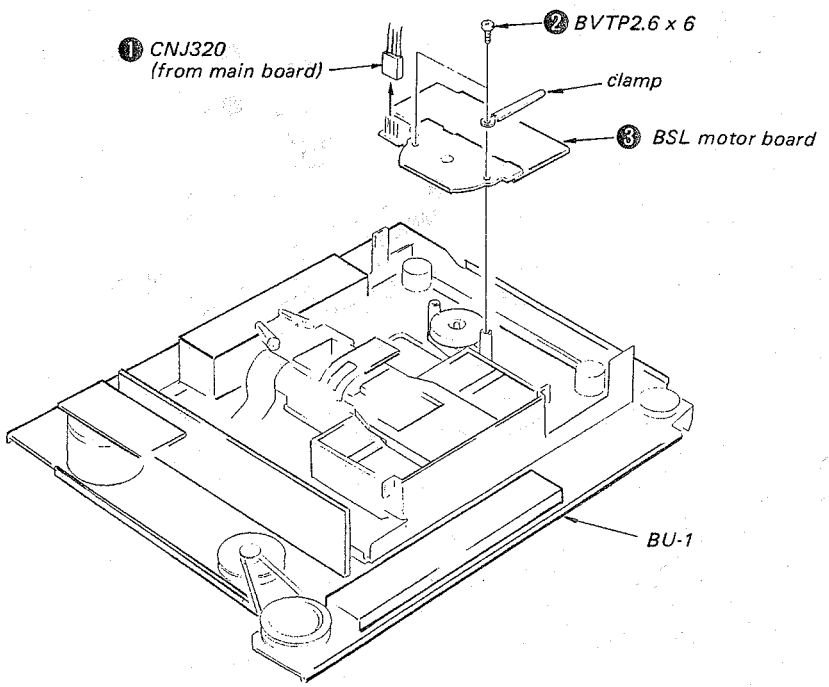


SWITCH BOARD

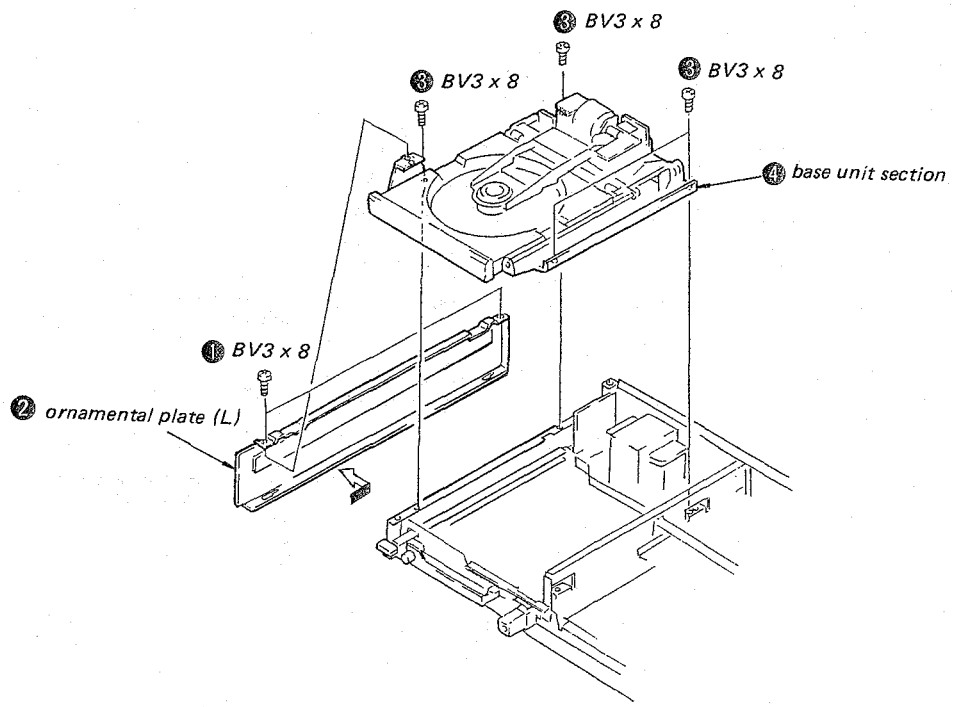
- All wires of each sw board are connected to loading motor board (page 14).



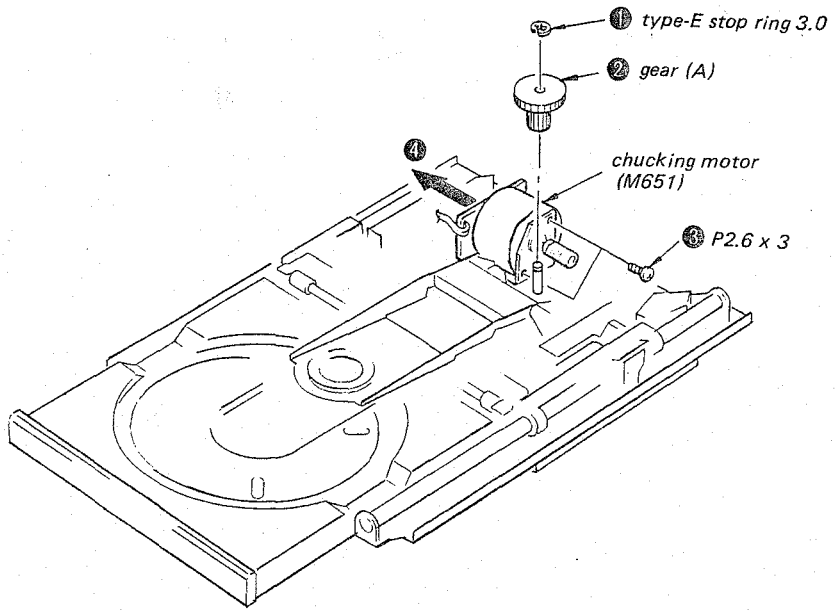
BSL MOTOR BOARD



MD SECTION



CHUCKING MOTOR



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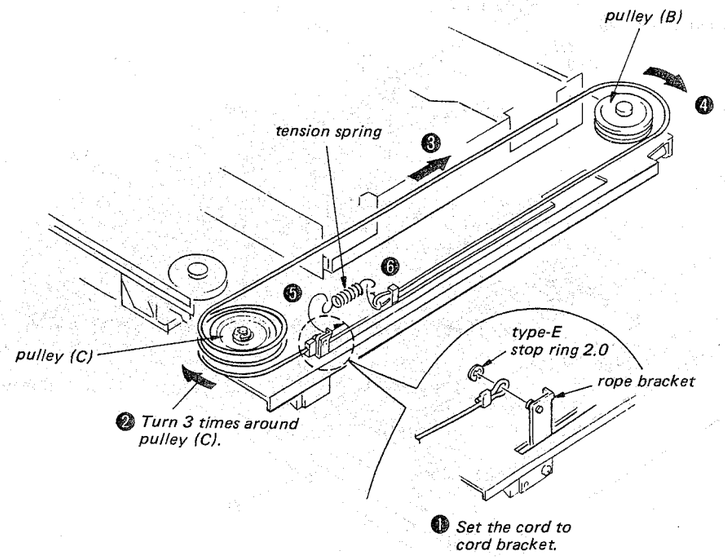
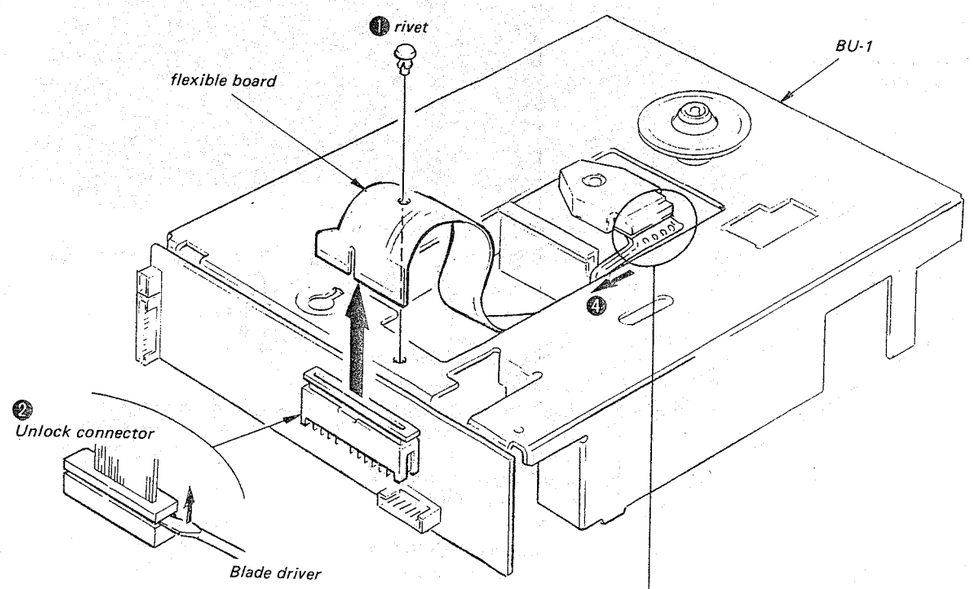
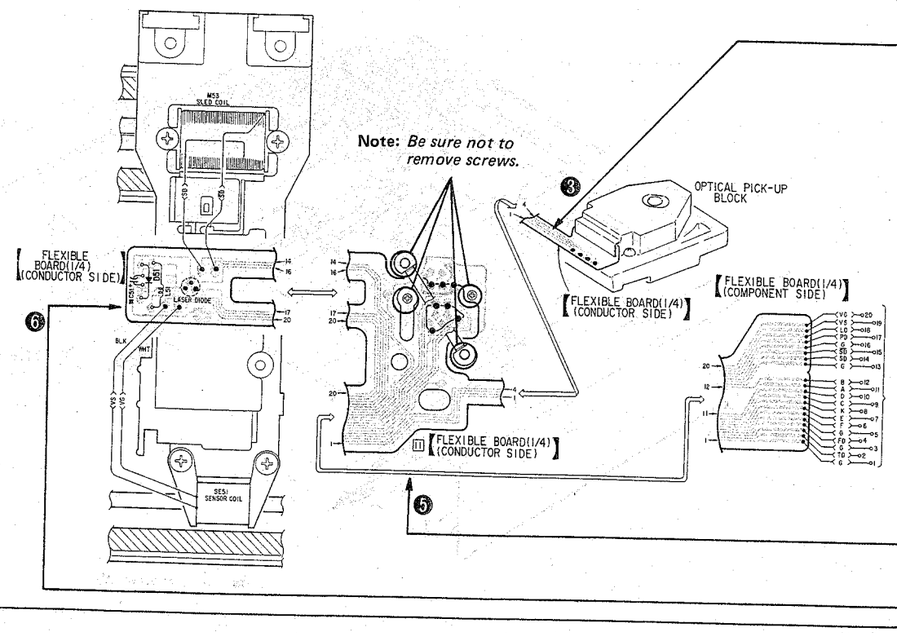
ROPE STRINGING

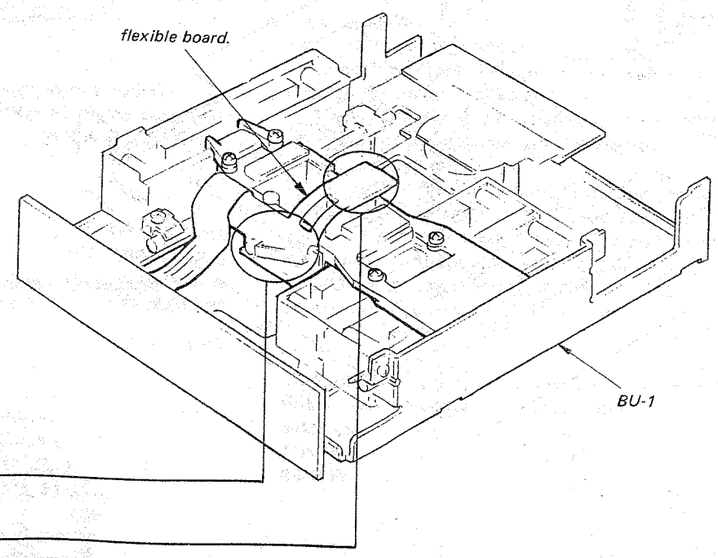


FLEXIBLE BOARD

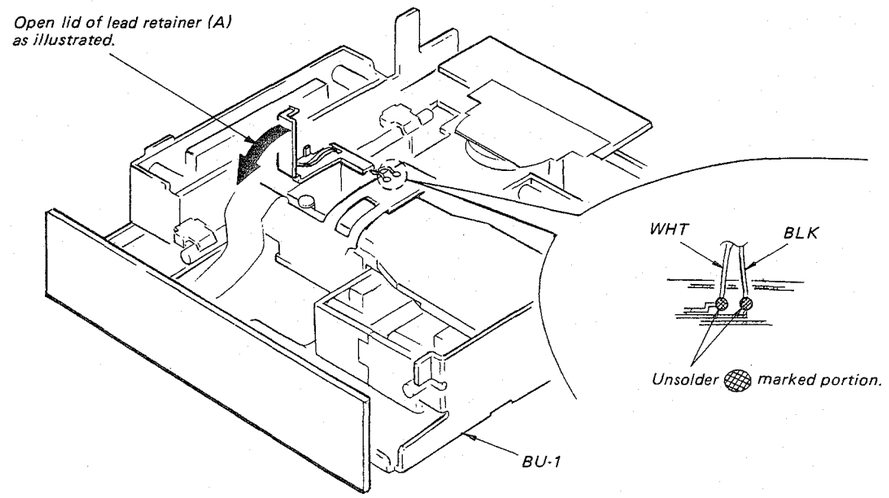
Unsolder • marked portion of ref. no. ❸, ❺, and ❻ and remove flexible board.

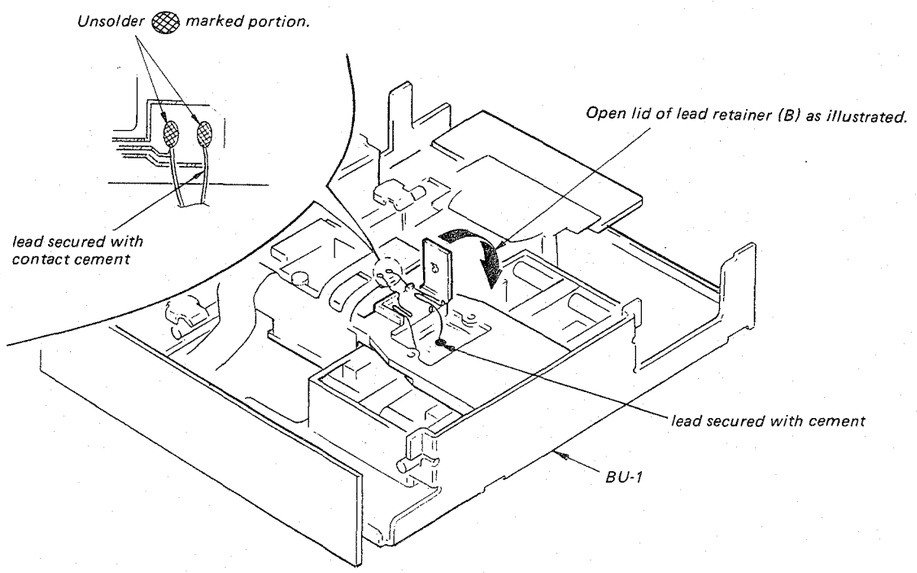






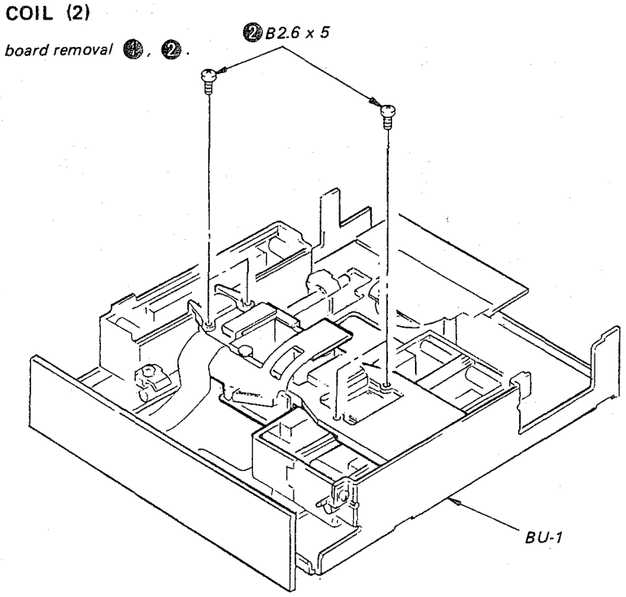
SLED/SENSOR COIL (1)



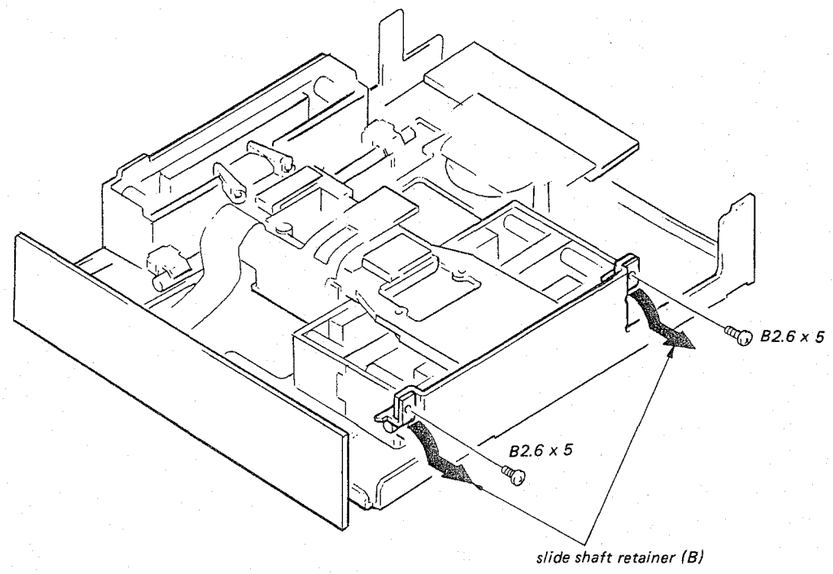

Unsolder marked portion.
Open lid of lead retainer (B) as illustrated.
lead secured with contact cement
lead secured with cement
BU-1

SLED/SENSOR COIL (2)

❶ Perfrom flexible board removal ❽, ❷.



SLED/SENSOR COIL (3)



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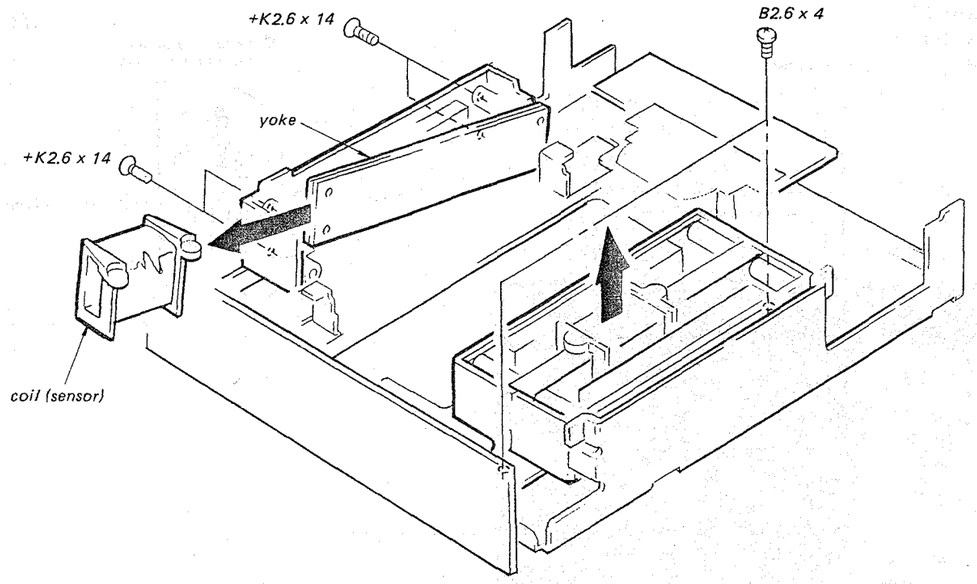
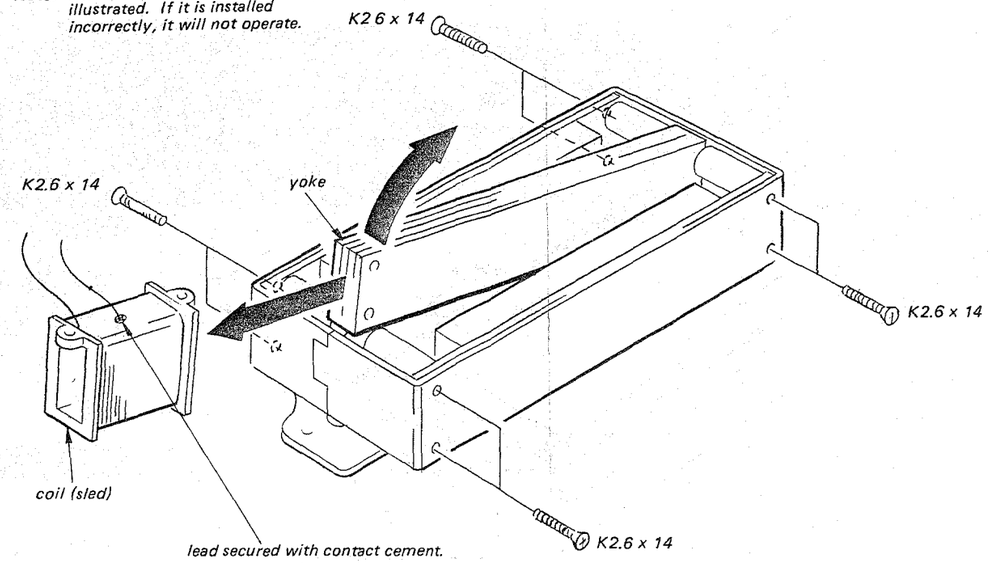
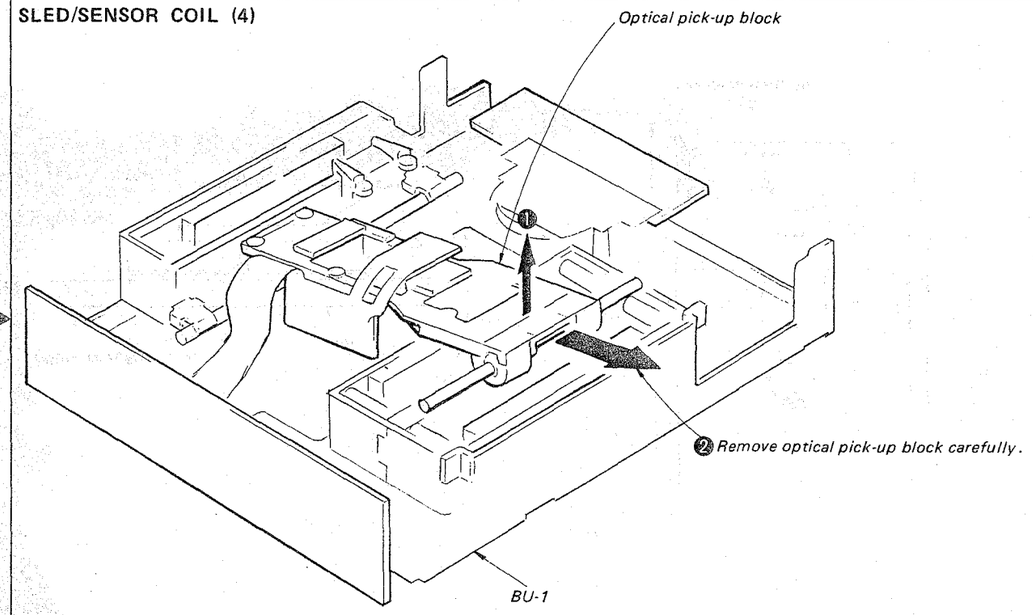
SLED/SENSOR COIL (5)



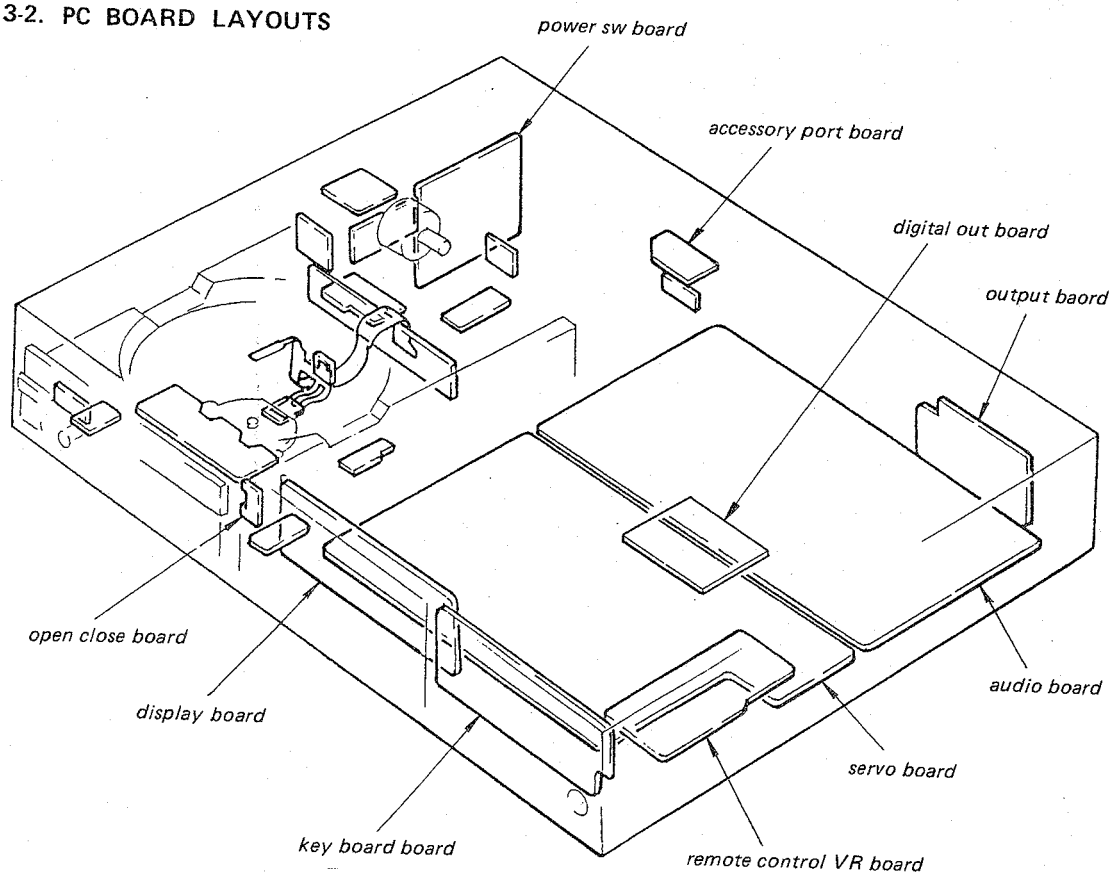
Note: *When installing sled coil, install as illustrated. If it is installed incorrectly, it will not operate.*



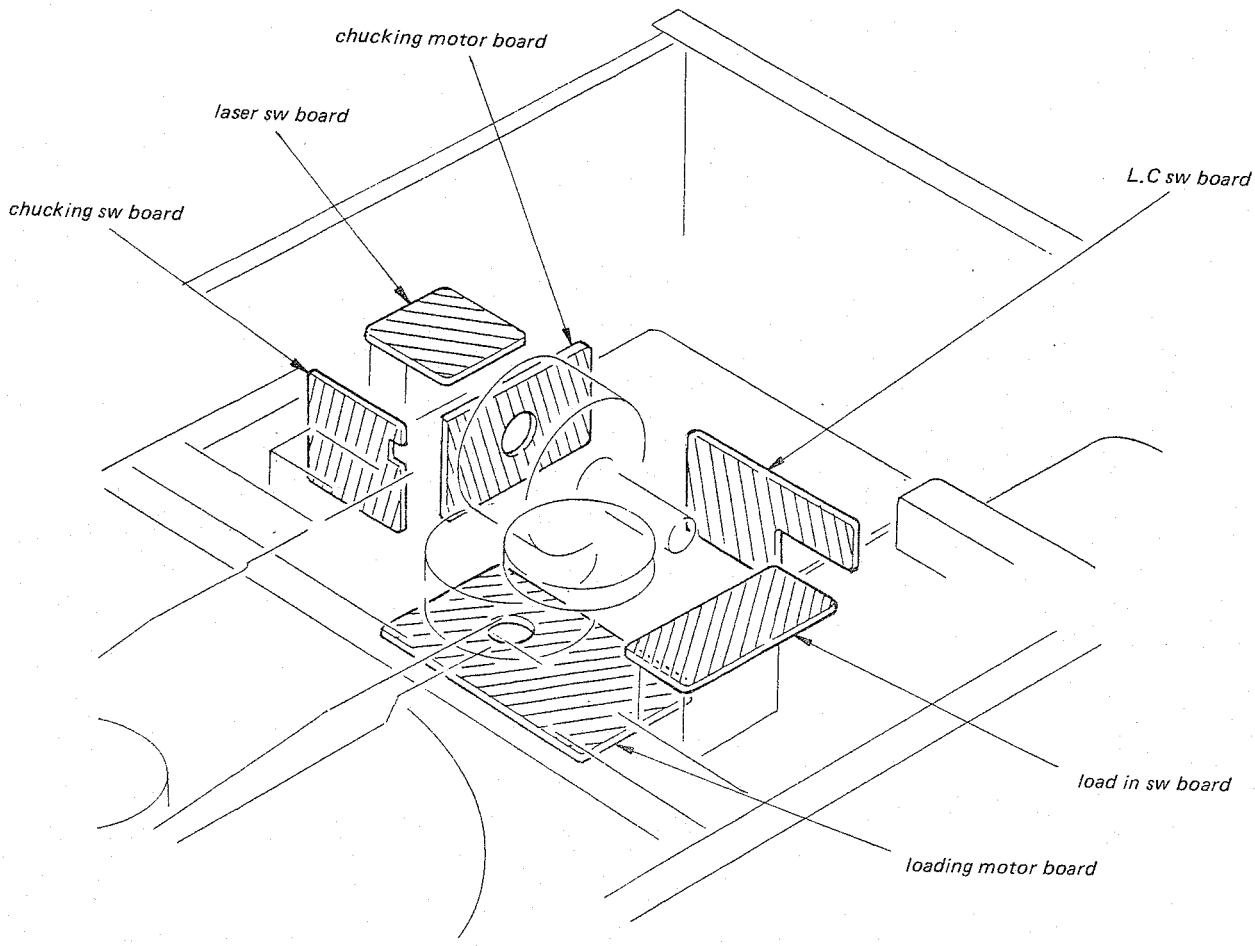
SLED/SENSOR COIL (4)



3-2. PC BOARD LAYOUTS



MECHANICAL SECTION



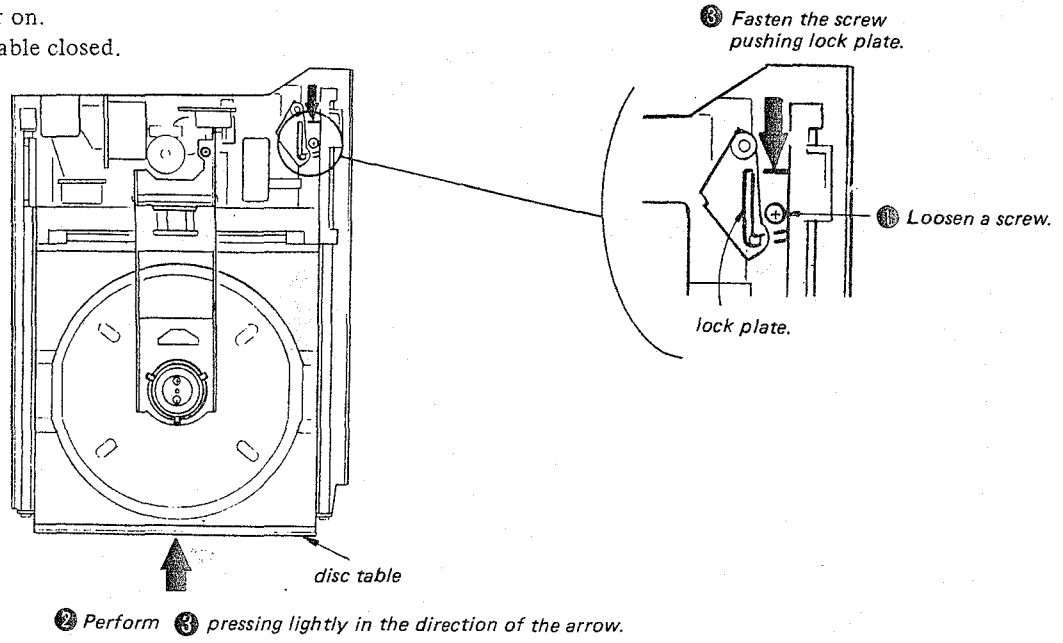
SECTION 4
ADJUSTMENTS

4-1. MECHANICAL ADJUSTMENT

DISC TABLE POINT ADJUSTMENT

Setting:

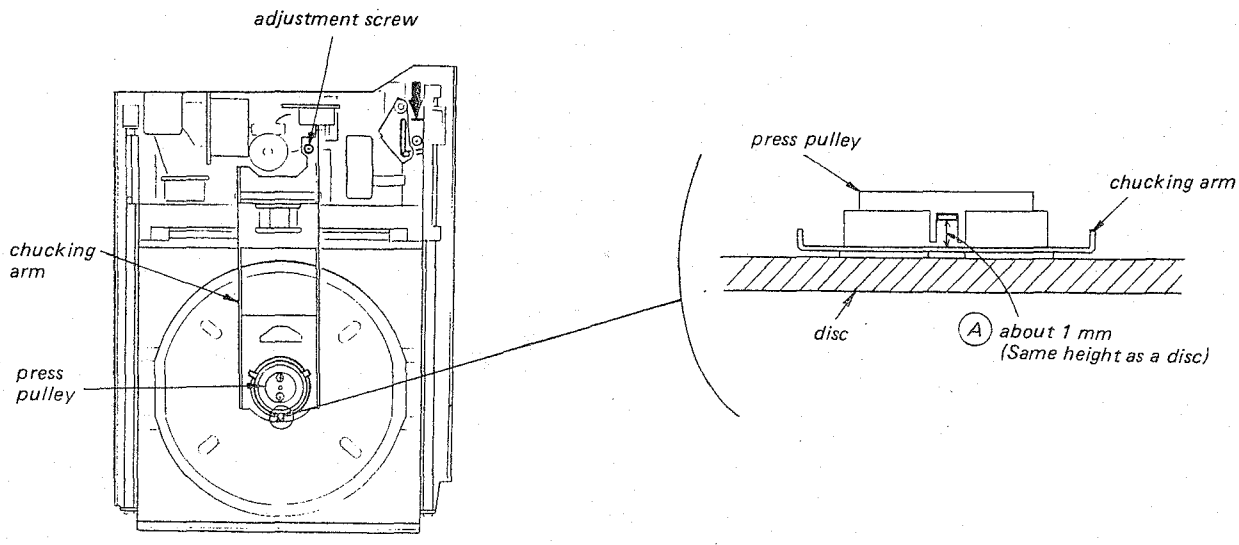
- Turn power on.
- Keep disc table closed.


❸ Fasten the screw pushing lock plate.
❶ Loosen a screw.
lock plate.
disc table
❷ Perform ❸ pressing lightly in the direction of the arrow.

CHUCKING ARM HEIGHT ADJUSTMENT

Adjust the height of portion (A) with disc inserted and disc table closed.

Repeat loading and confirm that chucking arm does not touch disc pulley.



4-2. ELECTRICAL ADJUSTMENTS

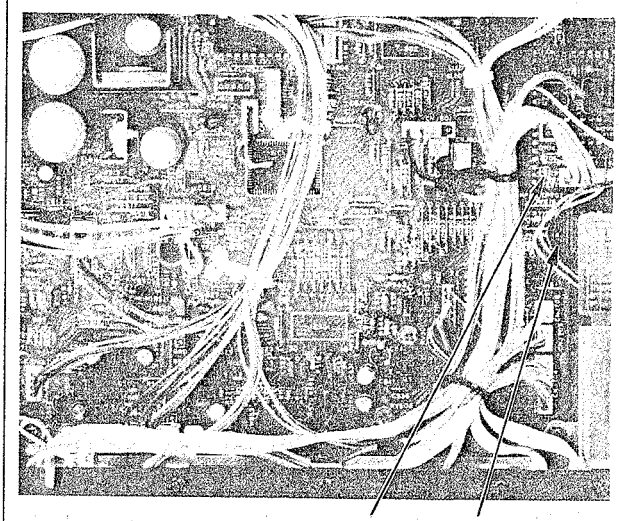
1. Perform adjustments in the order given.
2. Use YEDS-1 disc unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.

Adjustment Mode

1. Connect main amp board test point TP701 (TEST) and GND.
   [This is to prevent the disc table from opening even though pits are not read, by making microcomputer IC701 pin ④ low.]
2. Turn POWER switch on.
   (To reset micrcomputer.)

After adjustment, remove the lead wire connecting test points TP701 (TEST) and GND.

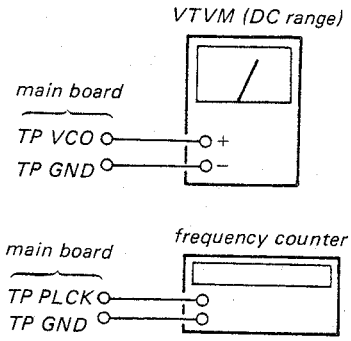
Adjustment Location: main board



Connect test points TP701 (TEST) and GND.

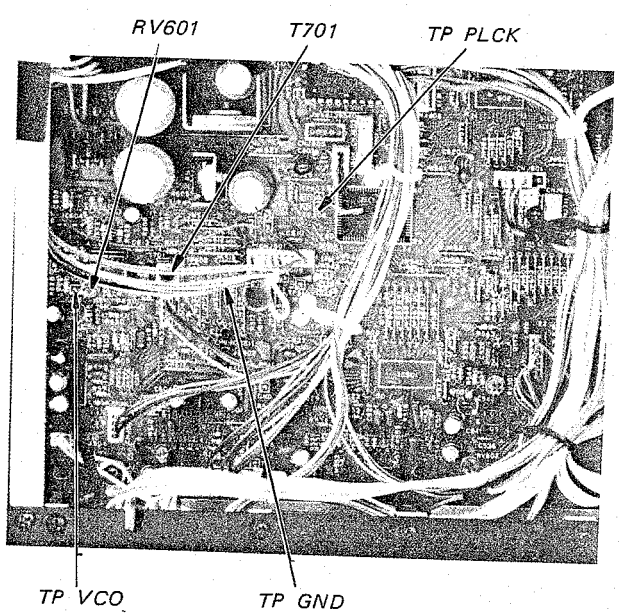
RF PLL Adjustment

Procedure:



1. Turn POWER switch ON. (stop mode).
2. Keep disc table opened.
3. Put set into adjustment mode. (See page 25)
4. Connect VTVM to main board test points TP VCO and TP GND.
5. Adjust main board RV601 so that reading on VTVM is OV ± 50 mV.
6. Connect the frequency counter to main board test points TP PLCK and TP GND.
7. Adjust main board T701 so that reading on frequency counter is 4.2818 MHz ± 10 KHz.
8. Reconnect lead wires connected in adjustment mode.
9. Put disc (YEDS-1) in and press ▷ PLAY button.
10. Confirm that reading on frequency counter is 4.3218 MHz.

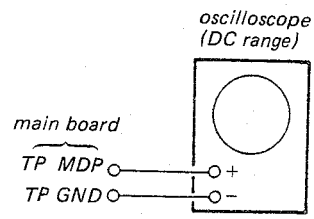
Adjustment Location: main board.



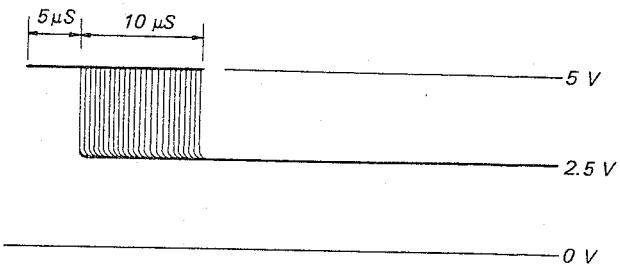
CLV Phase Lock Check

Perform this check when replacing BU-1 (base unit) and press pully in chucking arm section.)

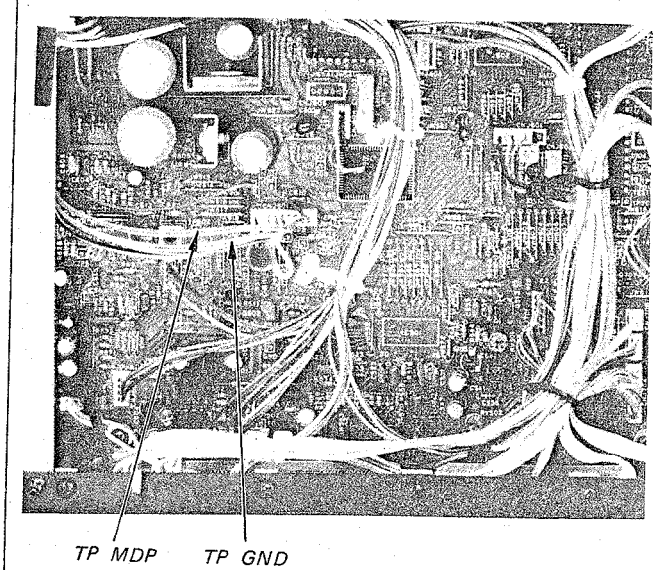
Procedure:



1. Put disc (YEDS-1) in.
2. Connect oscilloscope to main board test points TP MDP and TP GND.
3. Press ▷ PLAY button in TRACK 1 mode.
4. Confirm that the waveform is as shown in the figure below.



Adjustment Location: main board.



REFERENCE

Focus/Tracking Gain Adjustment

A frequency responce analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

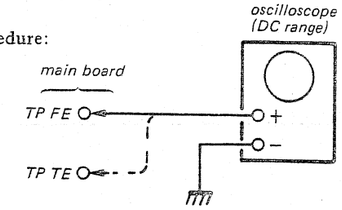
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮, ⏭ buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection (⏮, ⏭ buttons pressed.)	–	low
• Disc table opens shortly after STOP→▷PLAY.	low or high	–
• Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
• More poise during 2-axis device operation.	high	high

The following is a simple adjustment method.

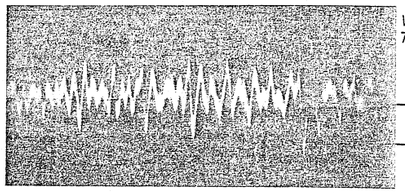
– Simple Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:

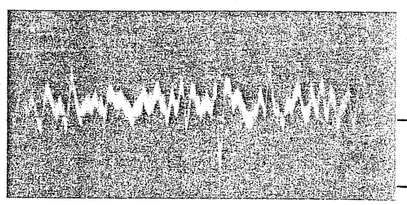


1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Put set in adjustment mode. (See page 25)
3. Insert disc (YEDS-1) and press ▷PLAY button.
4. Connect oscilloscope to main amp board TP FE.
5. Adjustment RV502 so that the waveform is as shown in the figure below. (focus gain adjustment)

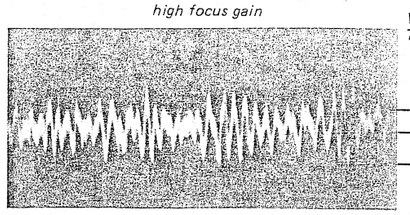


- Incorrent Examples (DC level changes more than on adjusted waveform)

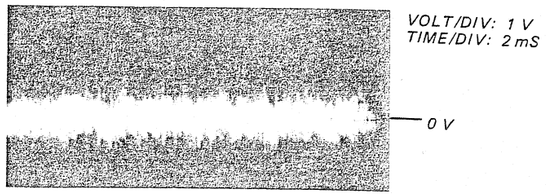
low focus gain



high focus gain

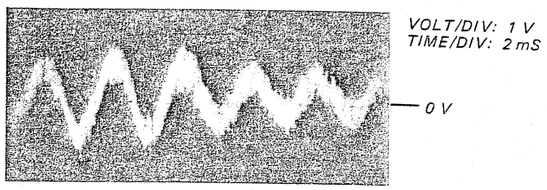


6. Connect oscilloscope to main board TP TE.
7. Adjust RV501 so that the waveform is as shown in the figure below. (tracking gain adjustment)

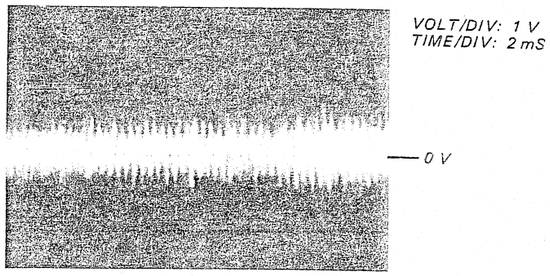


- Incorrect Examples (fundamental wave appears)

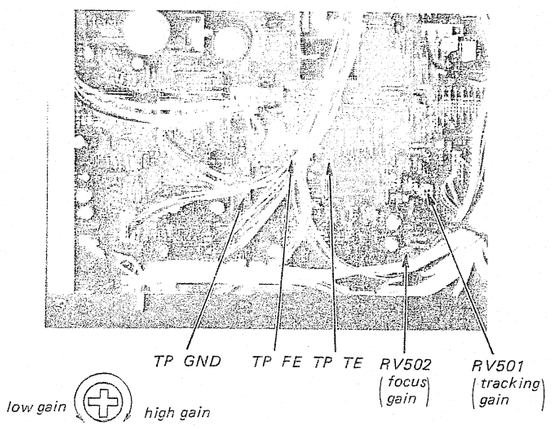
low tracking gain



high tracking gain
(higher fundamental wave than for low gain)

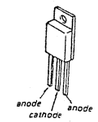


Adjustment Location: main board

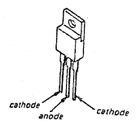


• Semiconductor Lead Layouts

C10P20FU



C10P20FUR



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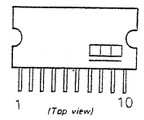
CX20198



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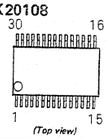

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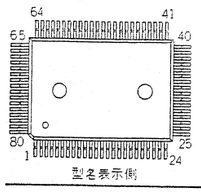

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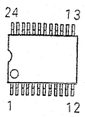

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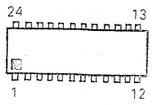

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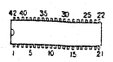

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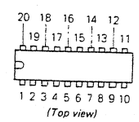

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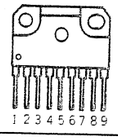

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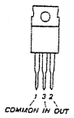

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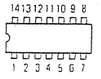
NJM4558D-FA
TL082CP

TC74HCU04P
TC40H004P



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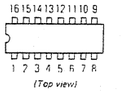

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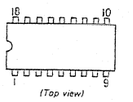

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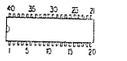

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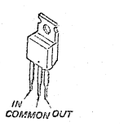

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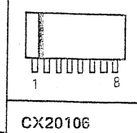
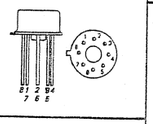


CX20106

LF353H



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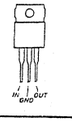

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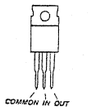

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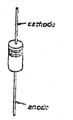

HZ6B2L
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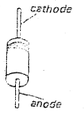
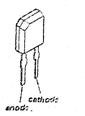
HZ5CLL
RD2.7EL1
10E2
RD12EB2
10YD2.4A
RD5.1EB2
RD30EB2



PH302B



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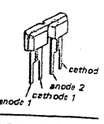
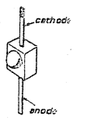
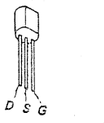


EBG3432S
AA3432S

PG222SY
BR2222S



2SK152-3



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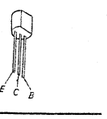
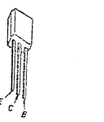


DTC143TS
DTC144ES
DTC114ES



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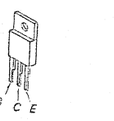

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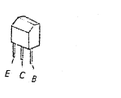
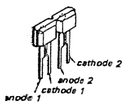
2SA1138

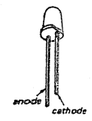


5-1. MOUNTING DIAGRAM – BU-1 (BASE UNIT) SECTION –

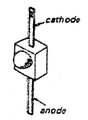
V1236Z



IG3432S
IA3432S



IS222SY
IR2222S

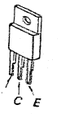


IK152-3

IC2001
IB740

IC2143TS
IC2144ES
IC2114ES

IC2275
IA985



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IA1138

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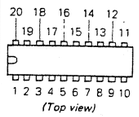
2SC2785

LB1245



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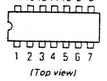
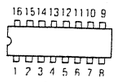


SN74LS193N



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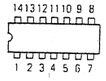

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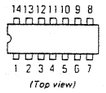

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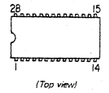
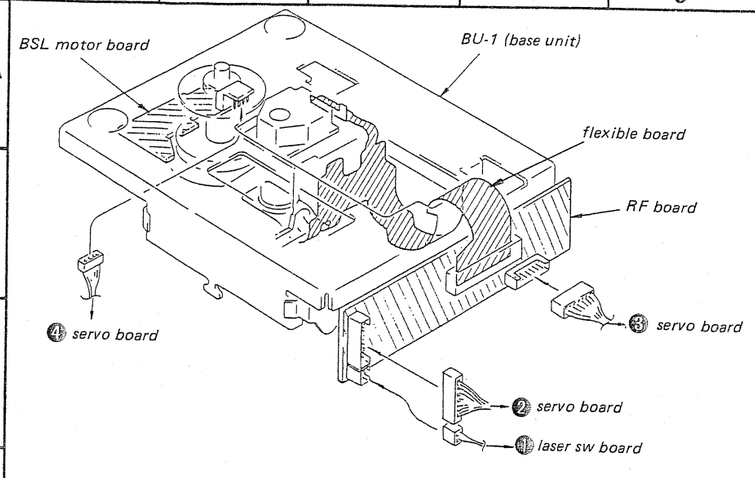
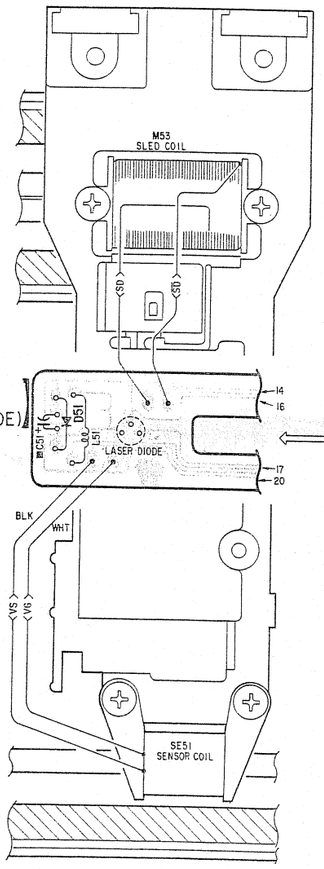
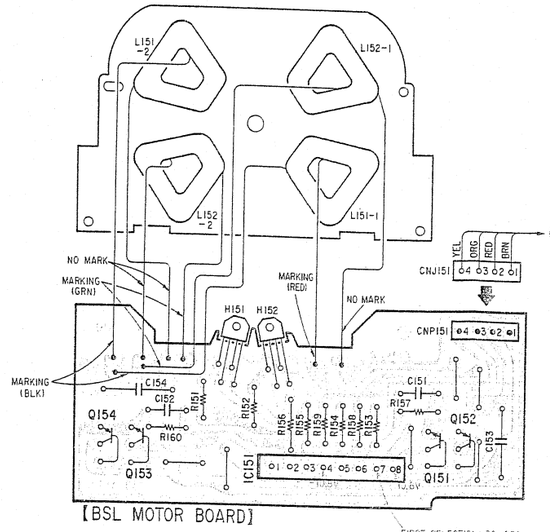
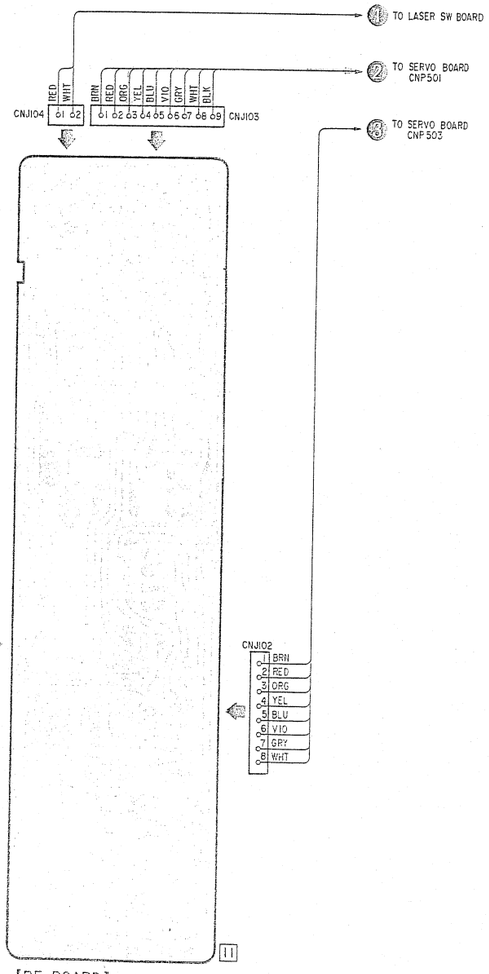
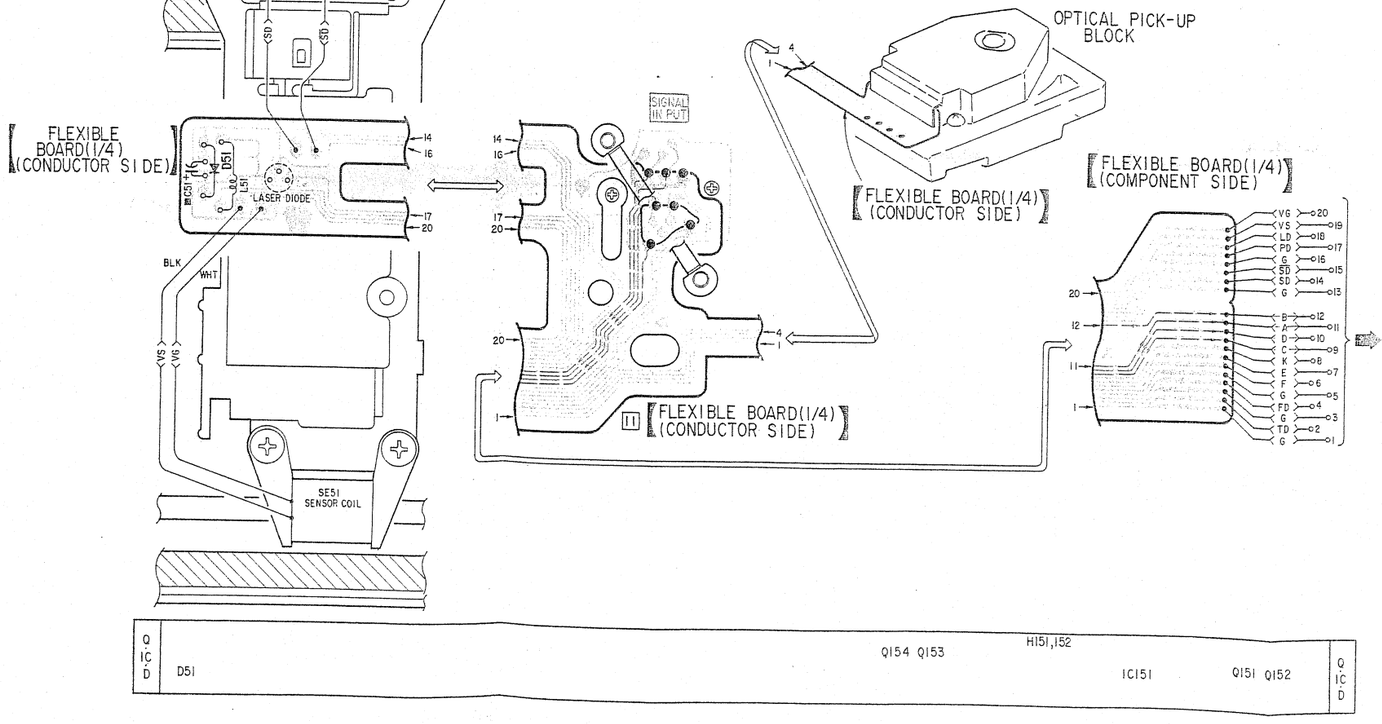






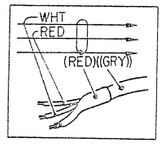






Note on Mounting Diagram:

- Color code of sleeving over the end of the jac



- : parts extracted from the component si
- : parts extracted from the conductor sid
- : part mounted on the conductor side.
- : indicates side identified with part numb
- : signal path
- : L-CH signal path
- : R-CH signal path
- : B + pattern

2. MOUNTING DIAGRAM

• See page 31 for notes. • See page 28 for Semiconductor Lead Layouts.

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

【REMOTE CONTROL VR BOARD】

【REMOTE CONTROL MOTOR BOARD】

【AUDIO BOARD】 B

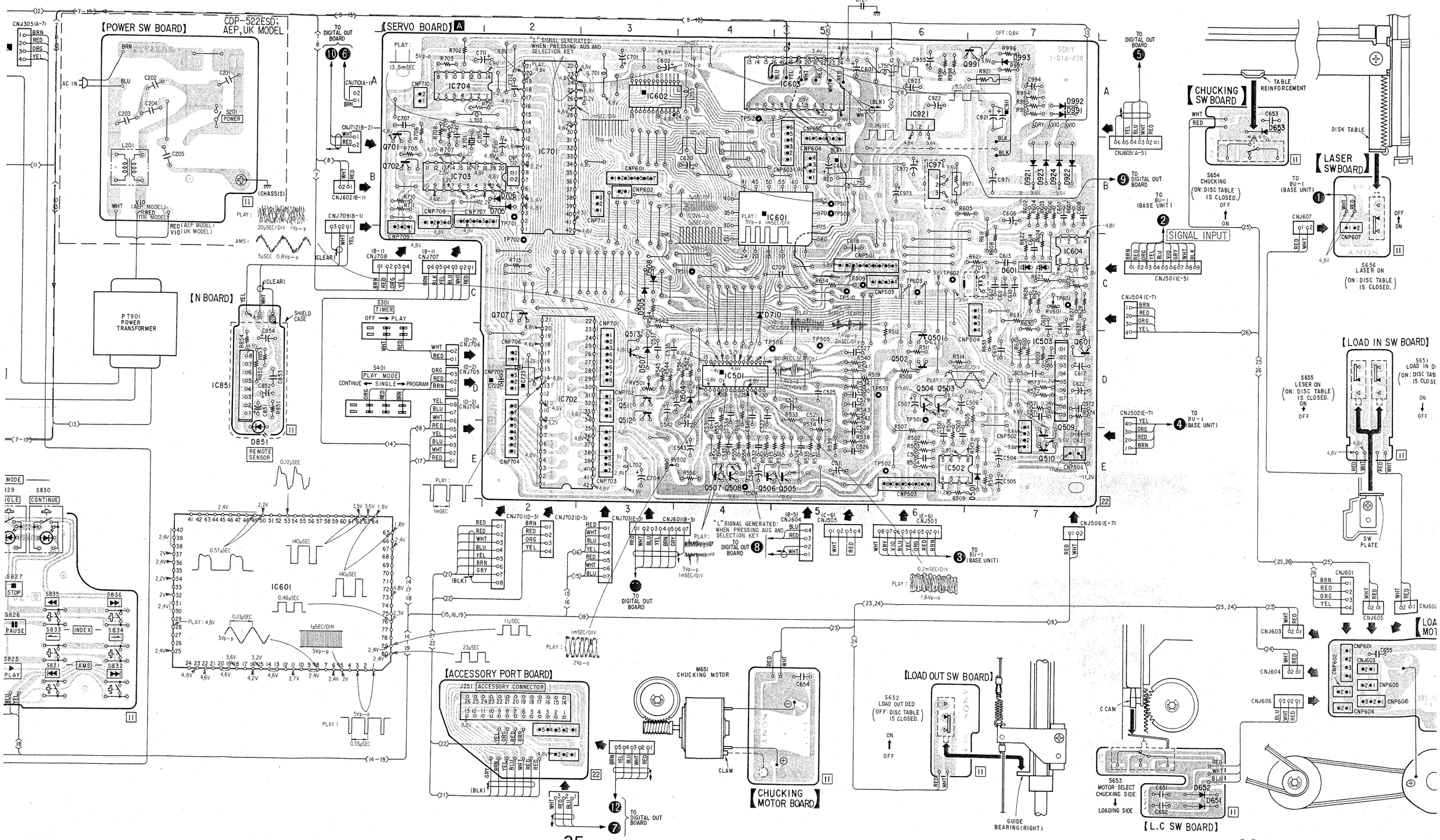
【OUTPUT BOARD】

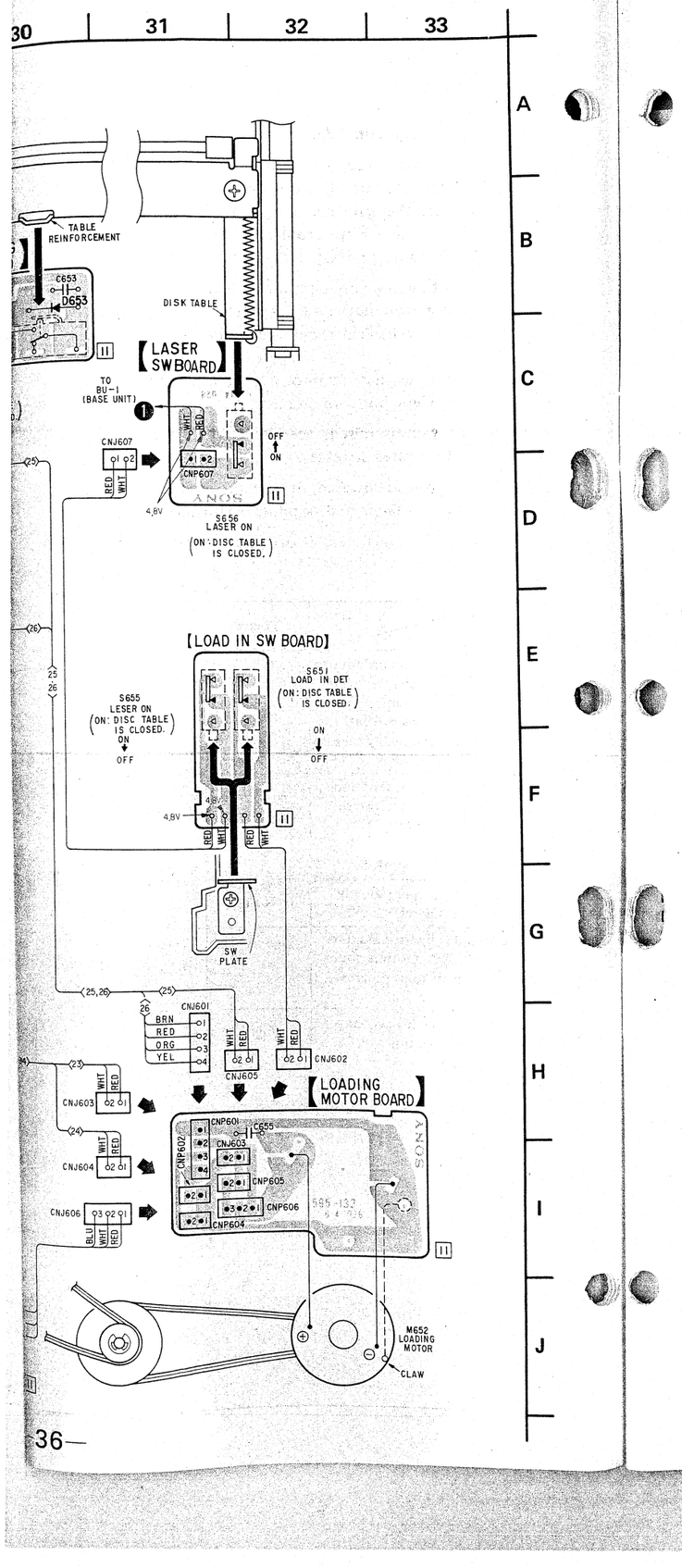
【POWER SW BOARD】 CDP-650ESD; US MODEL

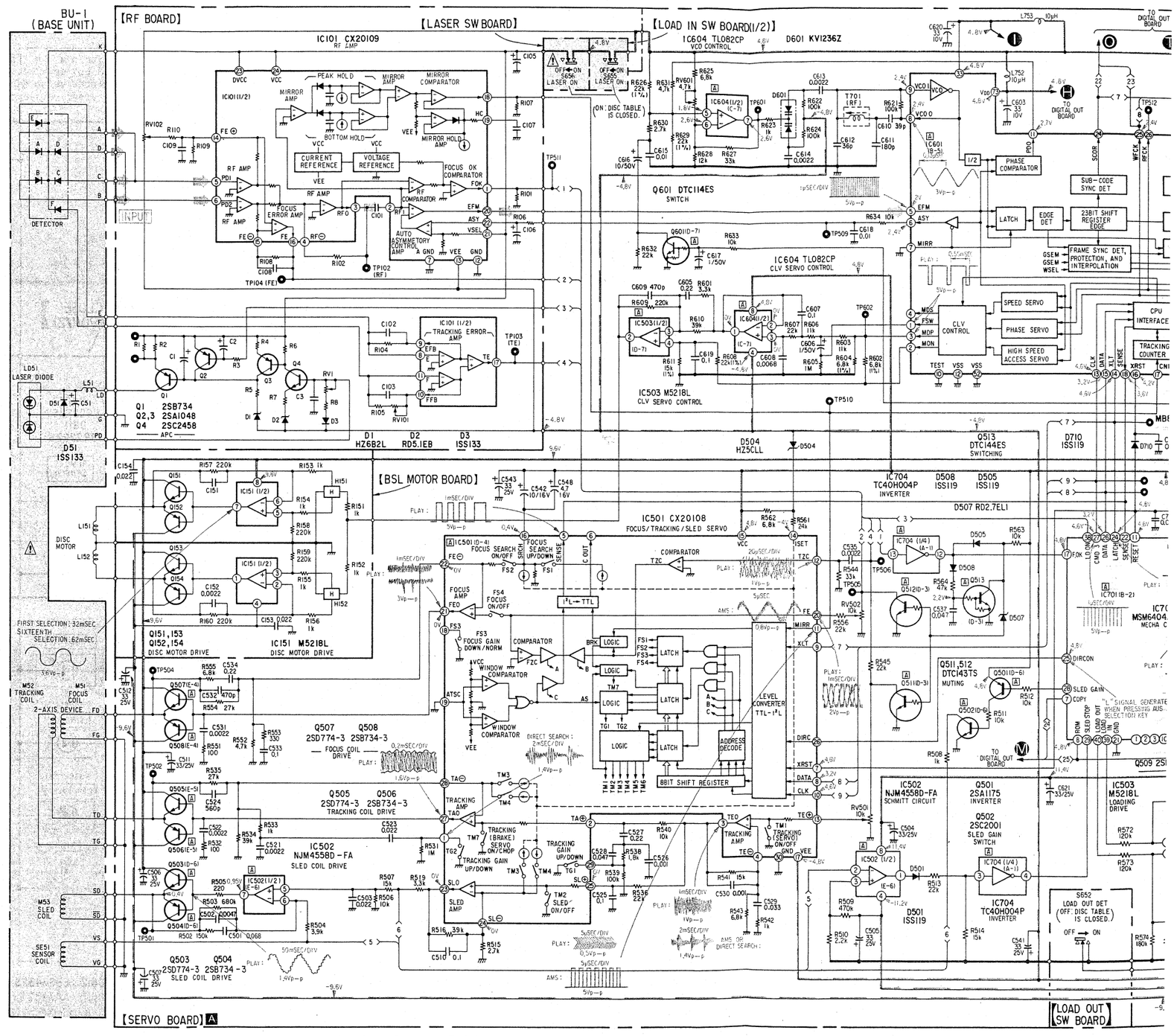
【OPEN/CLOSE SW BOARD】

【DISPLAY BOARD】 C

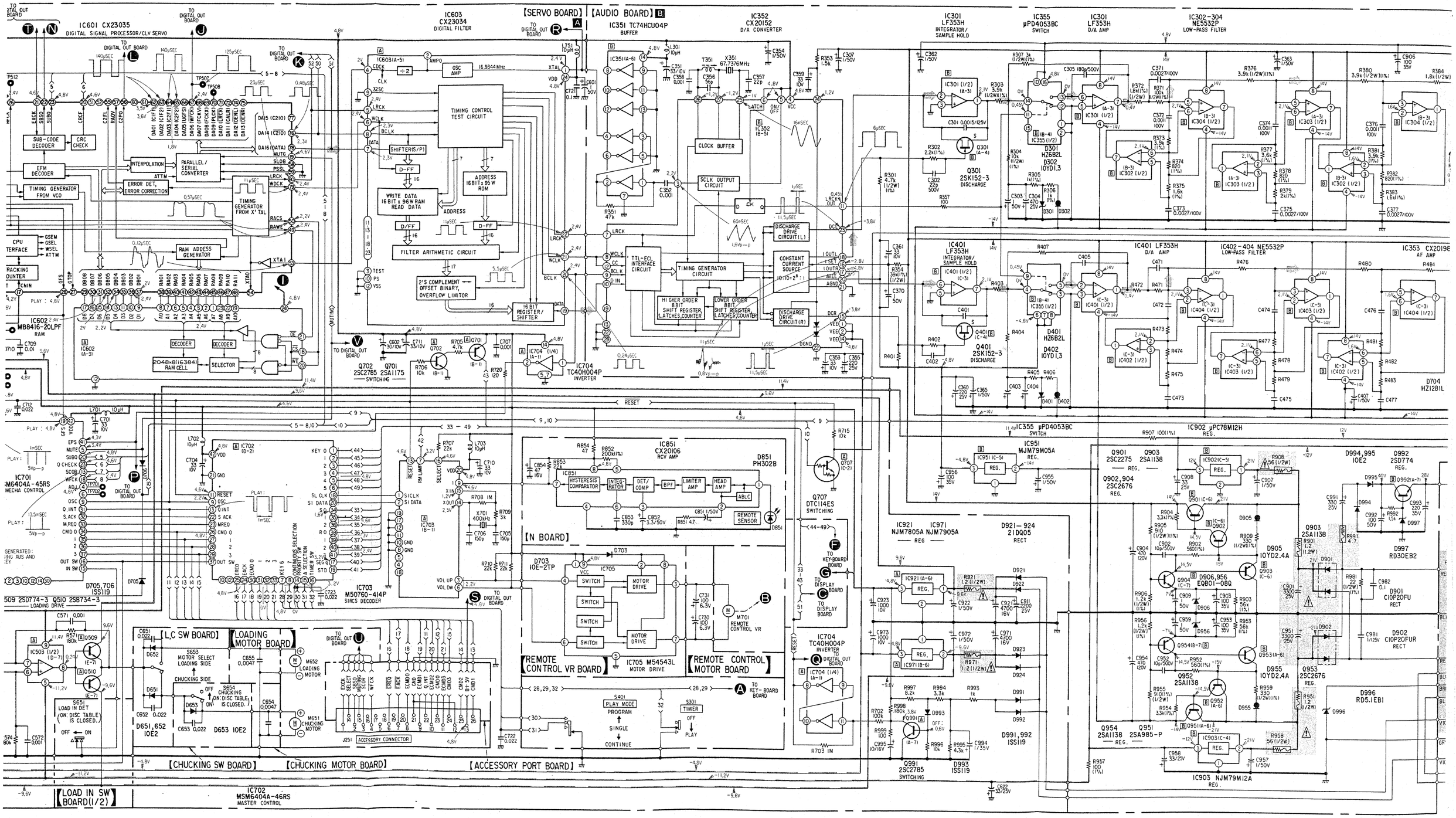
【KEY-BOARD BOARD】


【POWER SW BOARD】
CDP-522ESD: AEP, UK MODEL
【SERVO BOARD】
【N BOARD】
【ACCESSORY PORT BOARD】
【CHUCKING MOTOR BOARD】
【LOAD OUT SW BOARD】
【L.C SW BOARD】
【CHUCKING SW BOARD】
【LASER SW BOARD】
【LOAD IN SW BOARD】
PT901 POWER TRANSFORMER
IC601
IC602
IC603
IC604
IC605
IC701
IC702
IC703
IC704
IC501
IC502
IC503
IC921
IC971
M651 CHUCKING MOTOR
SIGNAL INPUT
TO DIGITAL OUT BOARD
TO BU-1 (BASE UNIT)
TABLE REINFORCEMENT
DISK TABLE
SW PLATE
GUIDE BEARING(RIGHT)
C CAM
CLAW





Numbers given near Ref. No. of ICs and transistors show these parts location on the PC boards.
(Example): Q101 (B-1)
(B-1) shows address on PC board
A — shows ref. no. of PC board


12
13
14
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23
24
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26
27
28
【SERVO BOARD】 A
【AUDIO BOARD】 B
IC601 CX23035
DIGITAL SIGNAL PROCESSOR/CLV SERVO
IC603 CX23034
DIGITAL FILTER
IC351 TC74HCU04P
BUFFER
IC352 CX20152
D/A CONVERTER
IC301 LF353H
INTEGRATOR/ SAMPLE HOLD
IC355 μPD4053BC
SWITCH
IC301 LF353H
D/A AMP
IC302-304 NE5532P
LOW-PASS FILTER
IC401 LF353H
INTEGRATOR/ SAMPLE HOLD
IC401 LF353H
D/A AMP
IC402-404 NE5532P
LOW-PASS FILTER
IC353 CX20198
AF AMP
IC602 MB8416-20LPF
RAM
IC701 M64404A-45RS
MECHA CONTROL
IC702 M5M6404A-46RS
MASTER CONTROL
IC703 M50760-414P
SIRCS DECODER
IC704 TC40H004P
INVERTER
IC705 M54543L
MOTOR DRIVE
IC851 CX20106
RCV AMP
IC902 μPC78M12H
REG.
IC951 MJM79M05A
REG.
IC903 NJM79M12A
REG.
IC921 NJM7805A
REG
IC971 NJM7905A
REG
Q702 2SC2785 2SA1175
SWITCHING
Q707 DTC114ES
SWITCHING
Q301 2SK152-3
DISCHARGE
Q401 2SK152-3
DISCHARGE
Q901 2SC2275
Q902,904 2SC2676
Q903 2SA1138
Q952 2SA1138
Q954 2SA1138
Q951 2SA985-P
Q991 2SC2785
D851 PH302B
D705,706 1SS119
D991,992 1SS119
D993 1SS119
D997 RD30EB2
D996 RD5.1EB1
D994,995 10E2
D997 RD30EB2
D996 RD5.1EB1
D704 HZ12B1L
D901 C10P20FU
D902 C10P20FUR
D301 HZ6B2L
D302 10YD1.3
D401 HZ6B2L
D402 10YD1.3
D905 10YD2.4A
D955 10YD2.4A
D921-924 2 1DQ05
RECT
D906,956 EQB01-08Q
D954(B-7)
D953(A-6)
D951(A-6)
D903(C-4)
D901(C-6)
D902(C-7)
D921(A-6)
D971(B-6)
D991(A-7)
D401
D402
D301
D302
D705,706 1SS119
D509 2SD774-3 Q510 2SB734-3
LOADING DRIVE
Q602 2SC1740
Q701 2SA1175
SWITCHING
Q851 PH302B
Q509
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Q989
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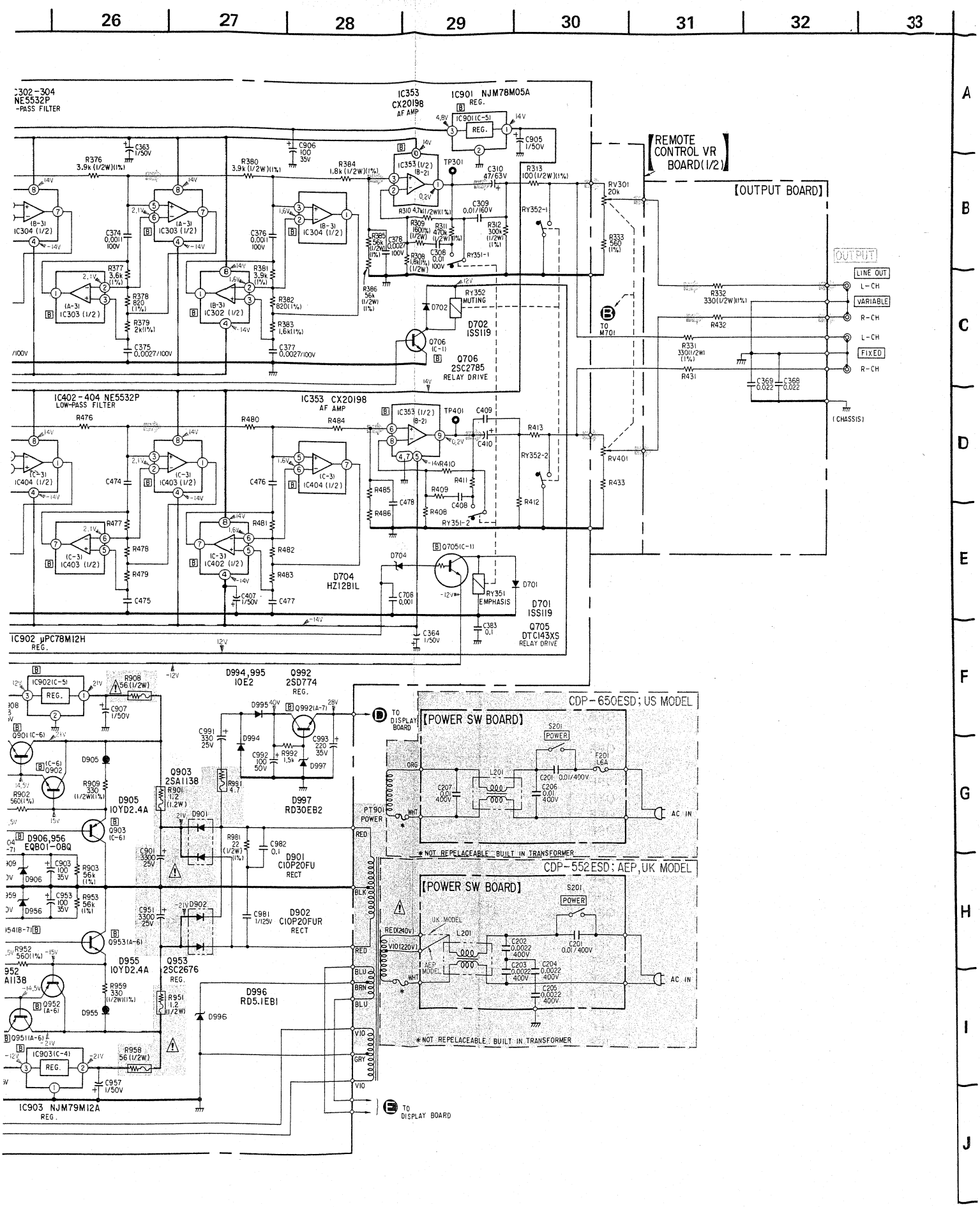
Q999
【L,C SW BOARD】
【LOADING MOTOR BOARD】
【CHUCKING SW BOARD】
【CHUCKING MOTOR BOARD】
【ACCESSORY PORT BOARD】
【LOAD IN SW BOARD(1/2)】
【N BOARD】
【REMOTE CONTROL VR BOARD】
【REMOTE CONTROL MOTOR BOARD】
TO DIGITAL OUT BOARD
TO KEY-BOARD BOARD
TO DISPLAY BOARD
RESET
PLAY MODE
PROGRAM
SINGLE
CONTINUE
TIMER
OFF
PLAY
ACCESSORY CONNECTOR
J251
M652 LOADING MOTOR
M651 CHUCKING MOTOR
M701 REMOTE CONTROL VR
S401
S301
S651 LOAD IN DET (ON: DISC TABLE IS CLOSED.)
S653 MOTOR SELECT LOADING SIDE
S654 CHUCKING (ON: DISC TABLE IS CLOSED.)
D651,652 10E2
D653 10E2
TIMING CONTROL TEST CIRCUIT
TIMING GENERATOR FROM VCO
TIMING GENERATOR FROM X'TAL
WRITE DATA 16 BIT x 96 W RAM READ DATA
ADDRESS 16 BIT x 95 W ROM
FILTER ARITHMETIC CIRCUIT
2'S COMPLEMENT → OFFSET BINARY, OVERFLOW LIMITOR
16 BIT REGISTER/ SHIFTER
SUB-CODE DECODER
CRC CHECK
EFM DECODER
INTERPOLATION
PARALLEL / SERIAL CONVERTER
ERROR DET, ERROR CORRECTION
RAM ADDESS GENERATOR
DECODER
SELECTOR
2048×8 (16384) RAM CELL
CLOCK BUFFER
SCLK OUTPUT CIRCUIT
TTL-ECL INTERFACE CIRCUIT
TIMING GENERATOR CIRCUIT
CONSTANT CURRENT SOURCE IO:IO÷2^8 : 1
DISCHARGE DRIVE CIRCUIT(L)
DISCHARGE DRIVE CIRCUIT(R)
HIGHER ORDER 8BIT SHIFT REGISTER, LATCHES, COUNTER
LOWER ORDER 8BIT SHIFT REGISTER, LATCHES, COUNTER
HYSTERESIS COMPARATOR
INTEGRATOR
DET/ COMP
BPF
LIMITER AMP
HEAD AMP
ABLC
REMOTE SENSOR
SWITCH
MOTOR DRIVE
CPU INTERFACE
TRACKING COUNTER
LOAD IN DET (ON: DISC TABLE IS CLOSED.)
OFF ← ON
CHUCKING SIDE
LOADING SIDE
PLAY : 4.8V
X'TAL
16.9344MHz
400kHz
67.7376MHz
TO DIGITAL OUT BOARD
TO KEY-BOARD BOARD
TO DISPLAY BOARD
TO DISPLAY BOARD
TO DIGITAL OUT BOARD
TO DIGITAL OUT BOARD
TO DIGITAL OUT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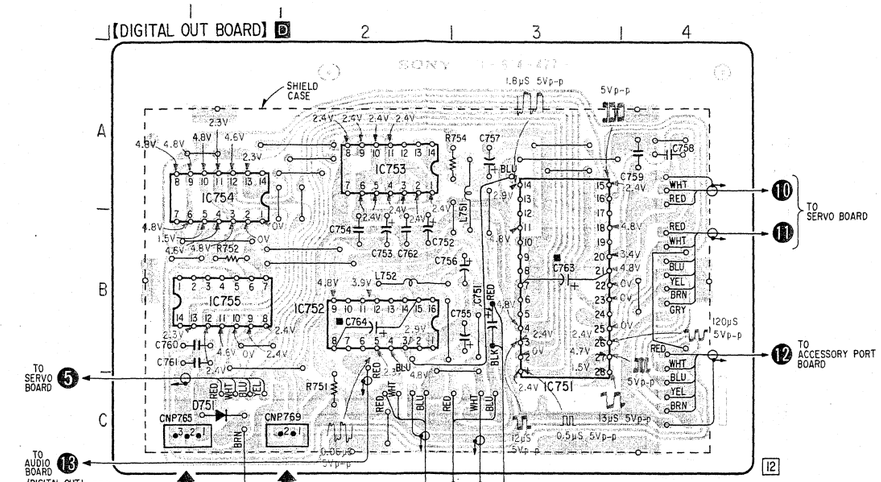
A
B
C
D
E
F
G
H
I
J
IC353 CX20198 AF AMP
IC901 NJM78M05A REG.
IC302-304 NE5532P LOW-PASS FILTER
REMOTE CONTROL VR BOARD(1/2)
[OUTPUT BOARD]
OUTPUT
LINE OUT
L-CH
VARIABLE
R-CH
L-CH
FIXED
R-CH
(CHASSIS)
TO M701
RY352 MUTING
D702 1SS119
Q706 2SC2785 RELAY DRIVE
IC402-404 NE5532P LOW-PASS FILTER
IC353 CX20198 AF AMP
D704 HZ12B1L
RY351 EMPHASIS
D701 1SS119
Q705 DTC143XS RELAY DRIVE
IC902 μPC78M12H REG.
D994,995 10E2
Q992 2SD774 REG.
Q903 2SA1138
D905 1OYD2.4A
D906,956 EQB01-08Q
D997 RD30EB2
D901 C10P20FU RECT
D902 C10P20FUR RECT
Q953 2SC2676 REG.
D955 1OYD2.4A
D996 RD5.1EB1
IC903 NJM79M12A REG.
TO DISPLAY BOARD
[POWER SW BOARD]
CDP-650ESD; US MODEL
CDP-552ESD; AEP, UK MODEL
PT901 POWER
AC IN
*NOT REPLACEABLE BUILT IN TRANSFORMER
UK MODEL
AEP MODEL

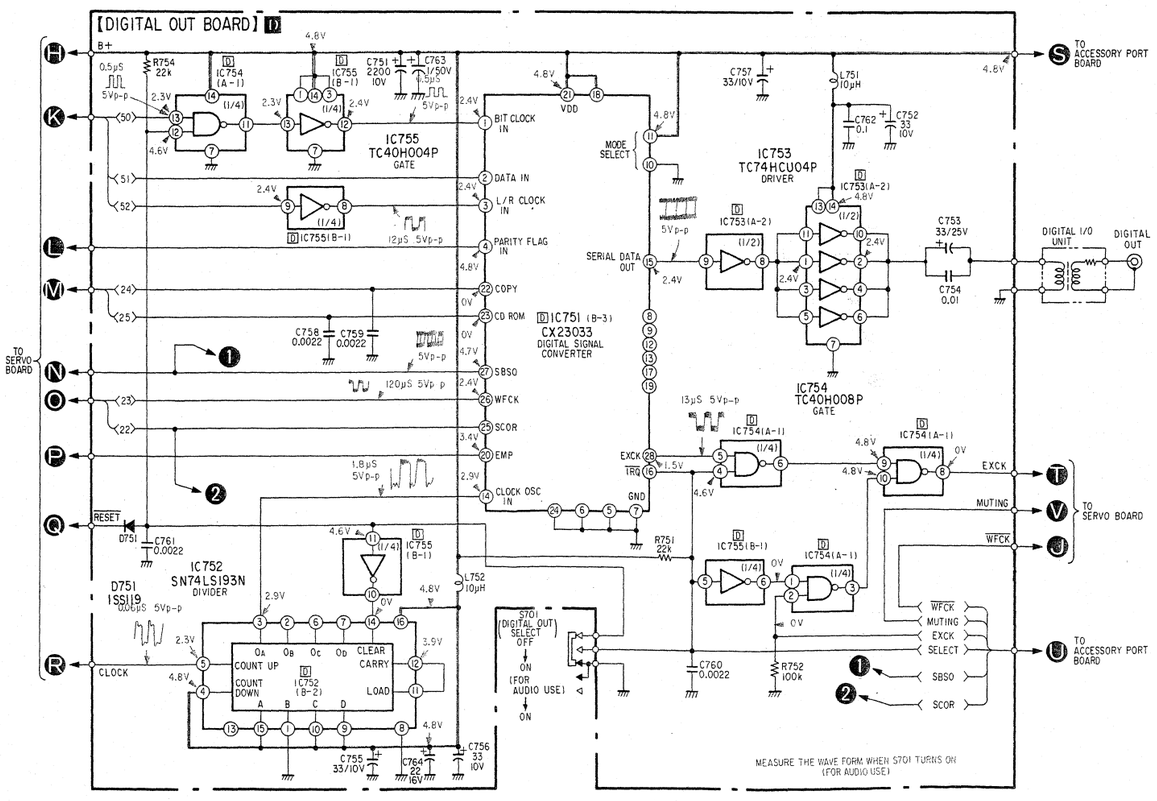
• See page 28 for Semiconductor Lead Layouts.

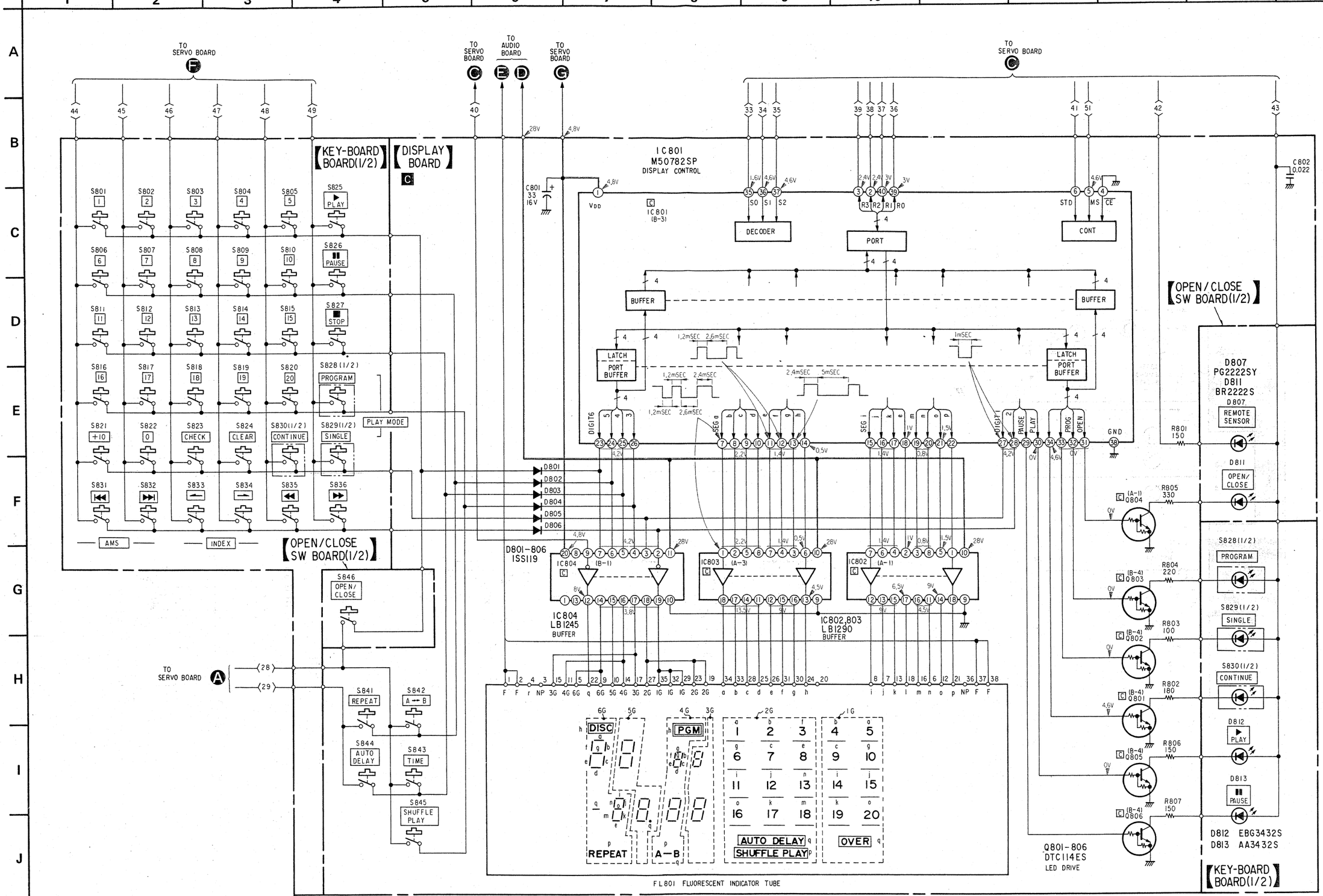
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ⇨ : signal path.
- Components for right channel have same values as for left channel.
- : nonflammable resistor.
- : B+ bus.
- : B− bus.
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V).
  no mark: STOP
  ( ): PLAY
- Waveforms are taken to ground in play mode by using oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S201	POWER	OFF
S301	TIMER	OFF
S401	PLAY MODE	OFF
S651	LOAD IN DET	OFF
S652	LOAD OUT DET	OFF
S653	MOTOR SWITCHING	OFF
S654	CHUCKING	OFF
S655	LASER ON (LOADING SIDE)	OFF
S656	LASER ON (LASER SIDE)	OFF
S801	(1)	OFF
S802	(2)	OFF
S803	(3)	OFF
S804	(4)	OFF
S805	(5)	OFF
S806	(6)	OFF
S807	(7)	OFF
S808	(8)	OFF
S809	(9)	OFF
S810	(10)	OFF
S811	(11)	OFF
S812	(12)	OFF
S813	(13)	OFF
S814	(14)	OFF
S815	(15)	OFF
S816	(16)	OFF
S817	(17)	OFF
S818	(18)	OFF
S819	(19)	OFF
S820	(20)	OFF
S821	(+10)	OFF
S822	(0)	OFF
S823	(CHECK)	OFF
S824	(CLEAR)	OFF
S825	(▶ PLAY)	OFF
S826	(▮▮ PAUSE)	OFF
S827	(■ STOP)	OFF
S828	(PROGRAM)	OFF
S829	(SINGLE)	OFF
S830	(CONTINUE)	OFF
S831	(⏮)	OFF
S832	(⏭)	OFF
S833	(←)	OFF
S834	(→)	OFF
S835	(◀◀)	OFF
S836	(▶▶)	OFF
S841	(REPEAT)	OFF
S842	(A – B)	OFF
S843	(TIME)	OFF
S844	(AUTO DELAY)	OFF
S845	(SHUFFLE PLAY)	OFF
S846	(OPEN/CLOSE)	OFF






TO SERVO BOARD (F)
TO SERVO BOARD (C)
TO AUDIO BOARD (E) (D)
TO SERVO BOARD (G)
TO SERVO BOARD (C)
【KEY-BOARD BOARD(1/2)】
【DISPLAY BOARD】
IC801 M50782SP DISPLAY CONTROL
DECODER
PORT
CONT
BUFFER
LATCH PORT BUFFER
S801 1
S802 2
S803 3
S804 4
S805 5
S825 PLAY
S806 6
S807 7
S808 8
S809 9
S810 10
S826 PAUSE
S811 11
S812 12
S813 13
S814 14
S815 15
S827 STOP
S816 16
S817 17
S818 18
S819 19
S820 20
S828(1/2) PROGRAM
S821 +10
S822 0
S823 CHECK
S824 CLEAR
S830(1/2) CONTINUE
S829(1/2) SINGLE
PLAY MODE
S831
S832
S833
S834
S835
S836
AMS
INDEX
【OPEN/CLOSE SW BOARD(1/2)】
S846 OPEN/CLOSE
TO SERVO BOARD (A)
S841 REPEAT
S842 A→B
S844 AUTO DELAY
S843 TIME
S845 SHUFFLE PLAY
D801
D802
D803
D804
D805
D806
D801-806 1SS119
IC804 LB1245 BUFFER
IC802,803 LB1290 BUFFER
DISC
PGM
REPEAT
A—B
AUTO DELAY
SHUFFLE PLAY
OVER
FL801 FLUORESCENT INDICATOR TUBE
【OPEN/CLOSE SW BOARD(1/2)】
D807 PG2222SY
D811 BR2222S
D807 REMOTE SENSOR
D811 OPEN/CLOSE
S828(1/2) PROGRAM
S829(1/2) SINGLE
S830(1/2) CONTINUE
D812 PLAY
D813 PAUSE
D812 EBG3432S
D813 AA3432S
Q801-806 DTC114ES LED DRIVE
【KEY-BOARD BOARD(1/2)】

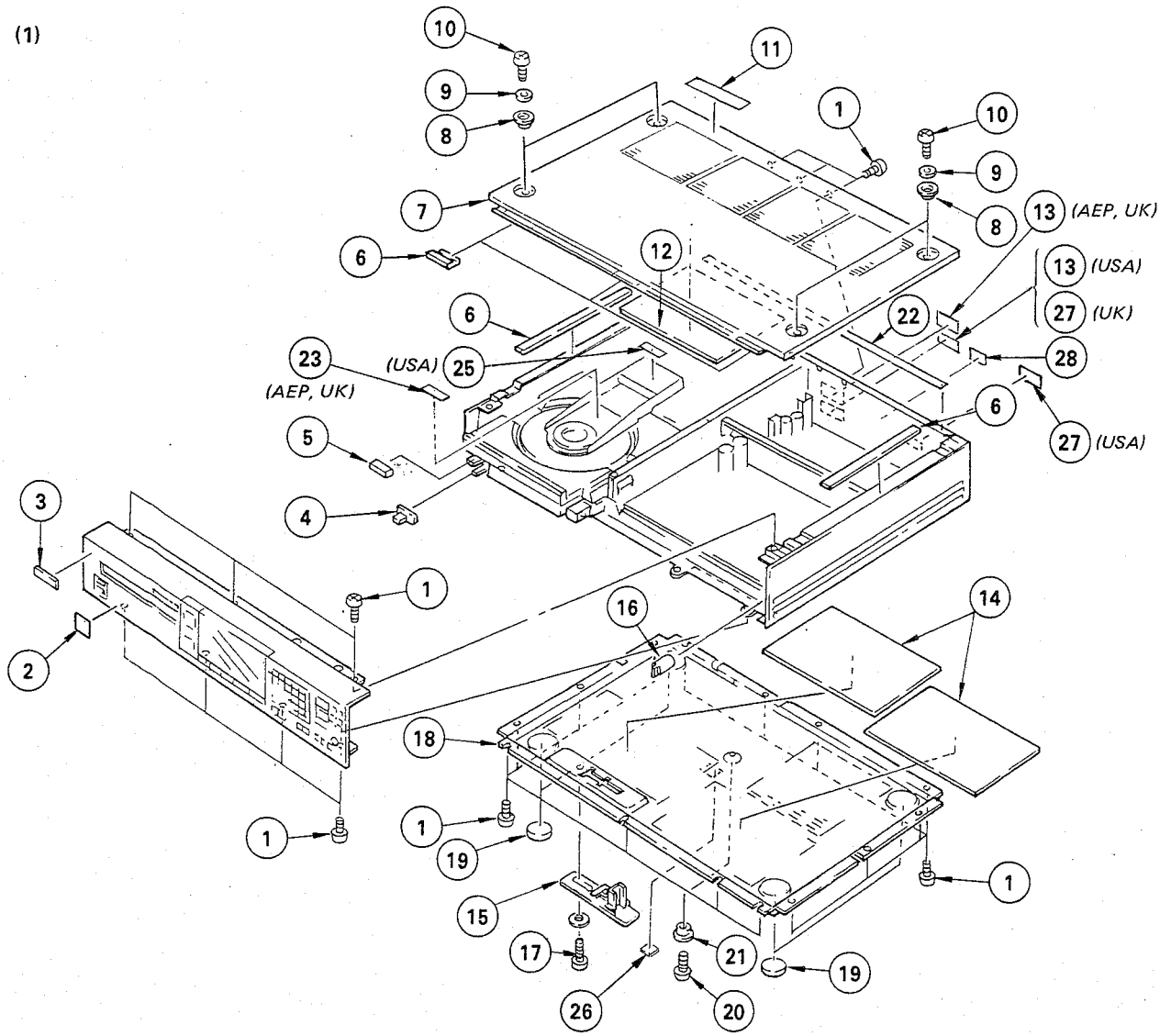
SECTION 6
EXPLODED VIEWS AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

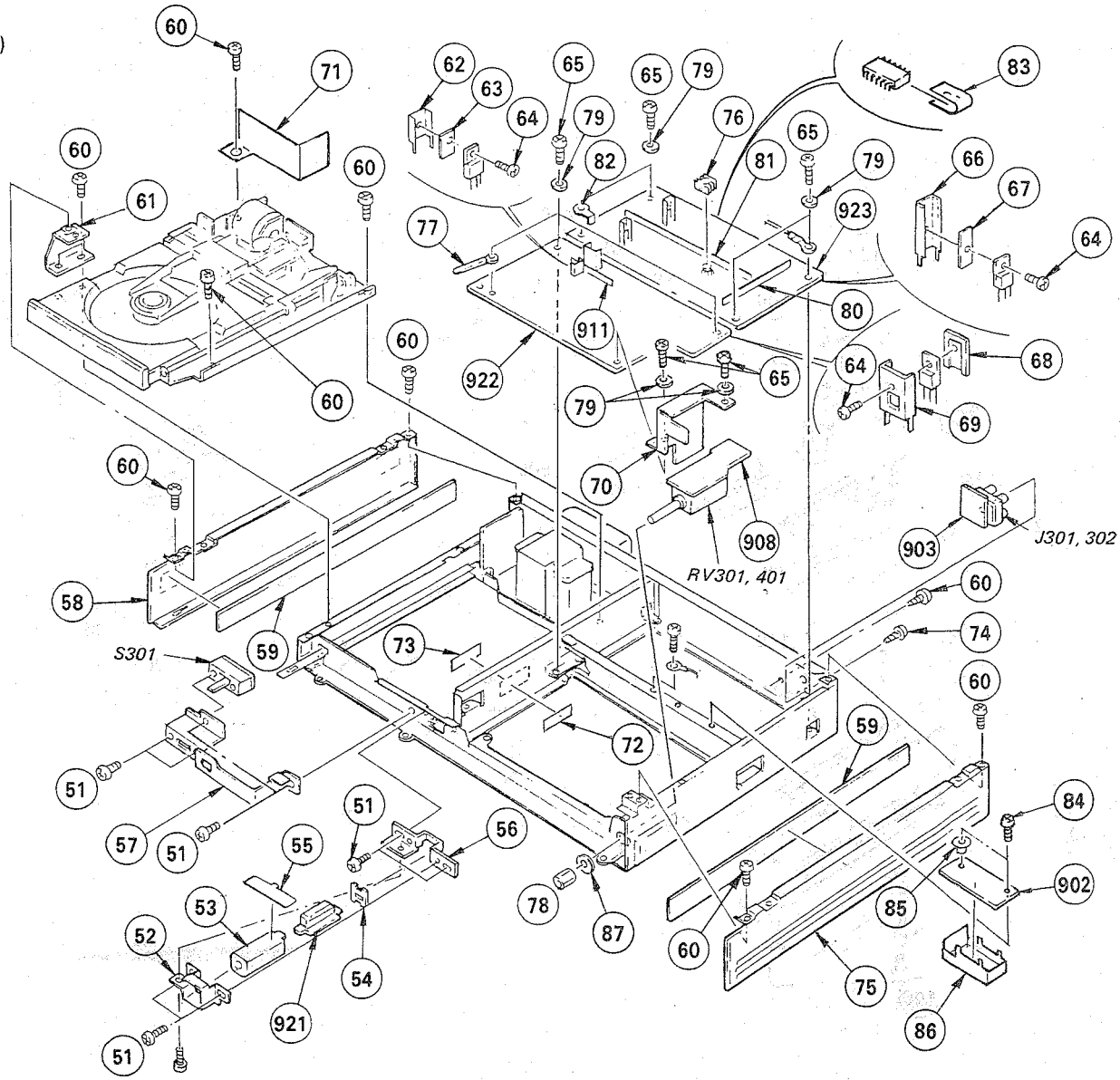
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

(1)



No.	Part No.	Description	Remarks
1	3-703-685-31	SCREW (+BV 3X8)	
2	3-703-710-41	STICKER, SONY SYMBOL (12)	
3	3-304-974-01	EMBLEM, SONY	
4	4-887-131-00	KNOB, SLIDE SWITCH	
5	X-4887-104-0	KNOB ASSY, POWER	
6	*4-886-578-00	SPACER (A), CONDUCTIVE	
7	4-908-925-11	PLATE, TOP	
8	3-576-298-11	ESCUTCHEON	
9	7-688-003-12	W 3, MIDDLE	
10	7-682-547-09	SCREW +B 3X6	
11	4-885-831-00	LABEL, CAUTION	
12	*4-908-959-01	DAMPER (B)	
13	*4-908-465-01	(US)....LABEL, MODEL NUMBER	
	*4-908-992-01	(AEP)...LABEL, MODEL NUMBER	
	*4-908-993-01	(UK)....LABEL, MODEL NUMBER	
14	*4-908-960-01	SHEET, PS	
15	*4-908-600-01	LEVER, LOCK, TRANSPORT	
16	4-908-908-01	KNOB, CONTROL	
17	3-323-470-01	SCREW (B3X6), (+ -)	
18	4-908-948-11	PLATE, BOTTOM	
19	4-908-922-01	FOOT	
20	3-703-685-31	SCREW (+BV 3X8)	
21	2-371-561-00	BUSHING (P), INSULATING	
22	*4-886-579-00	SPACER (B), CONDUCTIVE	
23	4-908-404-01	(AEP,UK)...LABEL, APARTURE, LASER, DHHS	
25	*3-323-294-01	(US)....LABEL, DHHS INTERLOCK	
26	*3-703-680-00	(US)....LABEL, CAUTION, SUB, NEW UL	
27	*3-703-845-01	(US,UK)...LABEL (N) (U/C), MAIN CAUTION	
28	4-885-838-00	(AEP).....LABEL, CLASSI	

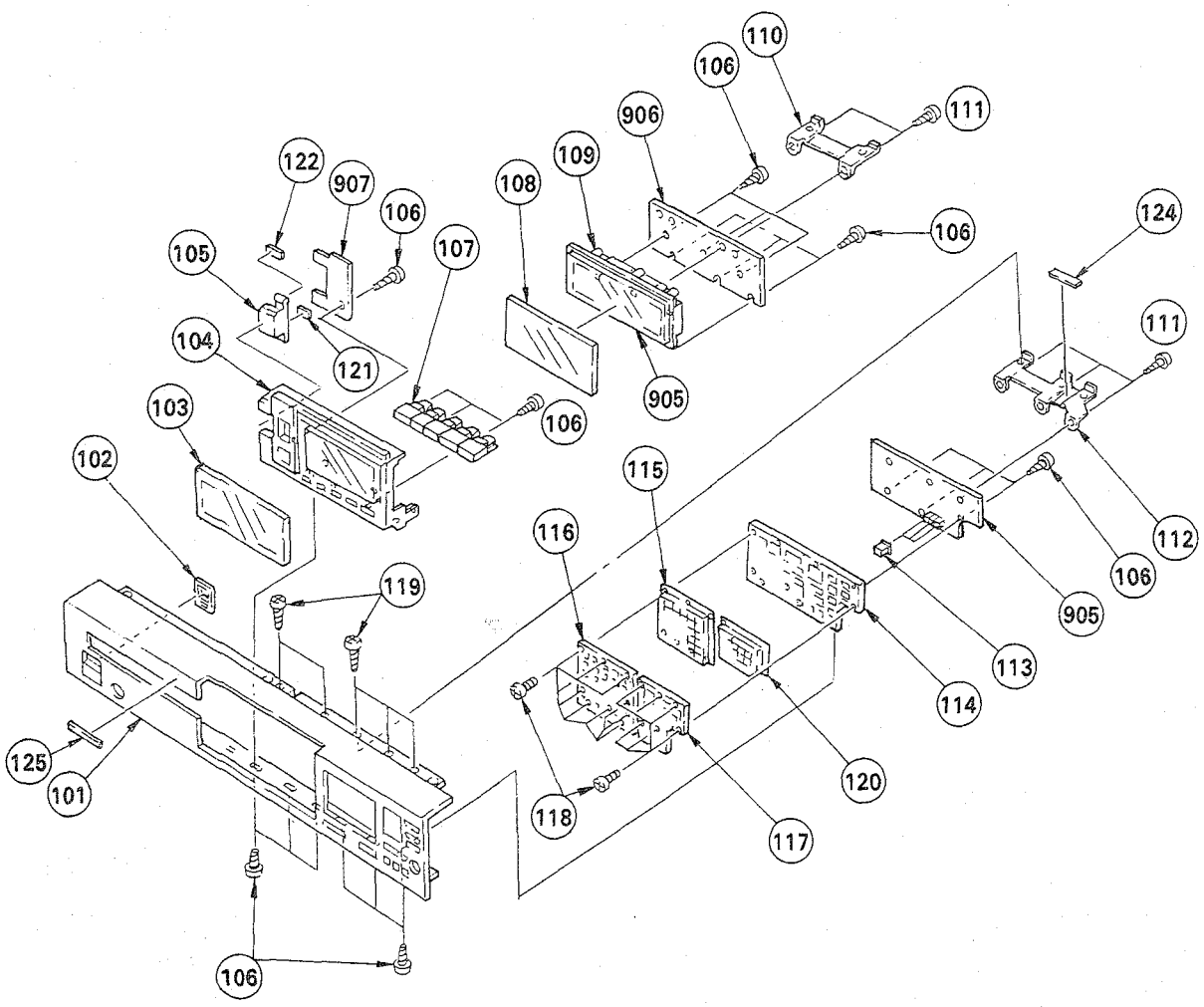
(2)



No.	Part No.	Description	Remarks
51	7-685-871-01	SCREW +BVTT 3X6 (S)	
52	*4-908-930-01	BRACKET (B), CATCHER, RAY	
53	*4-342-117-00	CASE, SHIELD (MAIN), R	
54	*4-342-118-00	LID, SHIELD CASE, R	
55	*4-908-931-01	SHEET (A), INSULATING	
56	*4-908-929-01	BRACKET (A), CATCHER, RAY	
57	*4-908-935-01	BRACKET, SWITCH	
58	4-886-538-31	PLATE (LEFT), SIDE, ORNAMENTAL	
59	*4-908-958-01	DAMPER (A)	
60	3-703-685-31	SCREW (+BV 3X8)	
61	*4-908-915-01	BRACKET (LEFT), PANEL	
62	*4-902-345-01	HEAT SINK	
63	*4-879-920-00	SPACER, HEAT SINK	
64	2-259-121-11	SCREW, TR	
65	7-685-873-01	SCREW +BVTT 3X10 (S)	
66	*4-886-555-00	HEAT SINK	
67	4-870-272-00	HEAT SINK	
68	4-887-707-00	RETAINER, TRANSFORMER	
69	*4-908-954-01	HEAT SINK, TR	
70	*4-908-953-01	PLATE (A), SHIELD	
71	*4-908-990-01	SHEET (D), INSULATING	
72	*3-701-030-00	LABEL, SERIAL NUMBER	

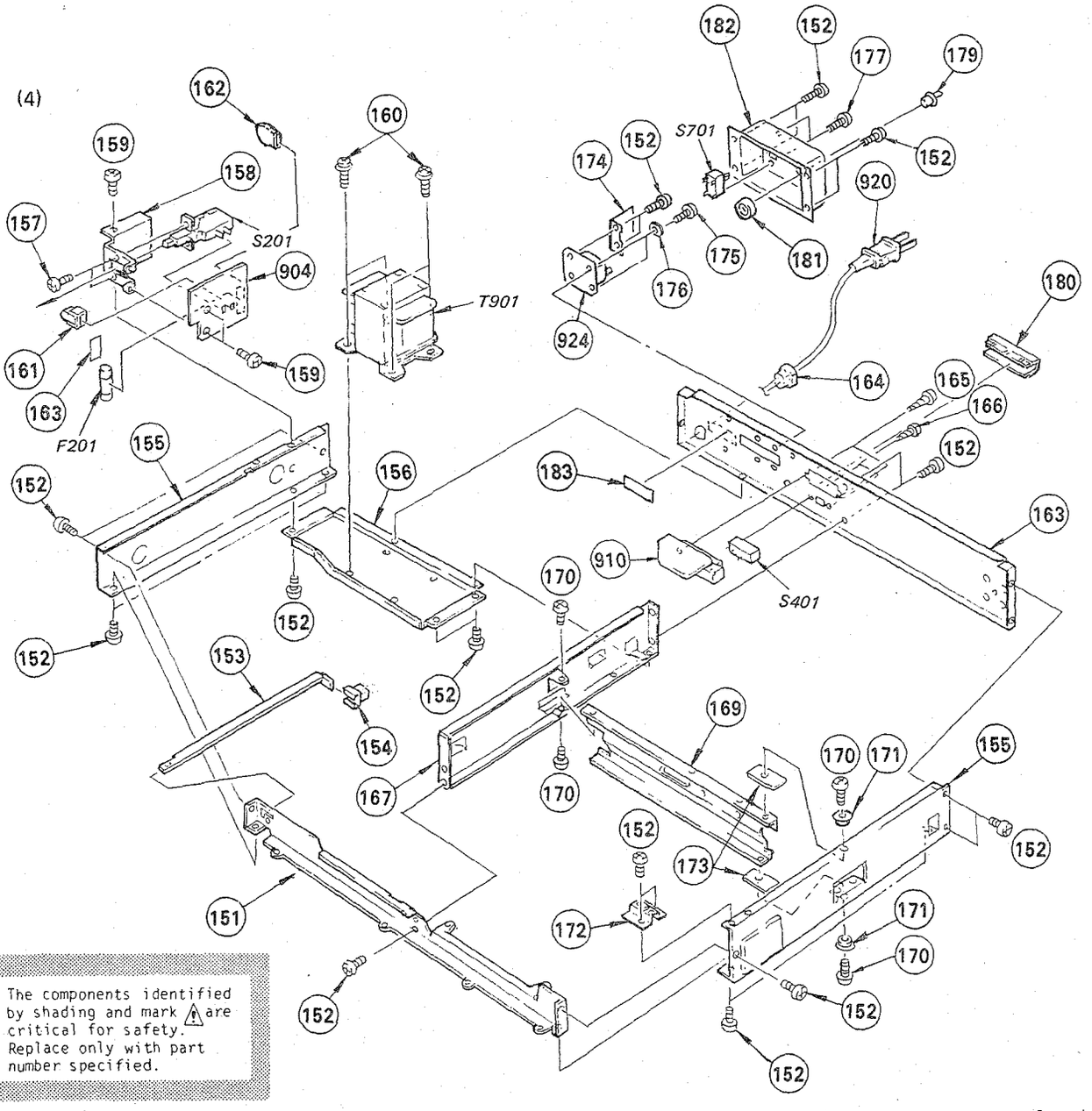
No.	Part No.	Description	Remarks
73	4-885-843-02	(AEP,UK)...LABEL CAUTION, LASER	
74	7-685-146-19	SCREW +P 3X8 TYPE2 NON-SLIT	
75	4-886-539-31	PLATE (RIGHT), SIDE, ORNAMENTAL	
76	2-269-798-01	HEAT SINK, TO-39	
77	*3-701-822-00	HOLDER, WIRE	
78	4-908-963-01	NUT, SPECIAL	
79	4-908-961-01	WASHER	
80	*4-908-951-01	REINFORCEMENT (B), PWB	
81	*4-908-950-01	REINFORCEMENT (A), PWB	
82	4-870-539-00	PLATE, GROUND	
83	*4-908-974-01	HOLDER, IC	
84	7-685-646-29	SCREW +BVTP 3X8 TYPE2 SLIT	
85	2-371-561-00	BUSHING (P), INSULATING	
86	*4-908-968-01	SHIELD (LOWER), DO PC BOARD	
87	3-701-446-11	WASHER	
902	*1-614-477-12	PC BOARD, DIGITAL OUT	
903	*1-614-969-21	PC BOARD, LINE OUT	
908	*1-614-481-21	PC BOARD, REMOTE CONTROL VR	
911	*1-560-242-11	BUS BAR 3P	
921	*1-611-717-11	PC BOARD, N	
922	*A-4619-275-A	MOUNTED PCB, SERVO	
923	*A-4651-046-A	MOUNTED PCB, AUDIO	

(3)



No.	Part No.	Description	Remarks
101	4-908-946-11	(AEP,UK)...PANEL, FRONT	
	4-908-946-31	(US).....PANEL, FRONT	
102	X-4908-901-1	ESCUTCHEON ASSY, POWER SWITCH	
103	4-908-904-01	PLATE, FROSTED	
104	X-4908-905-1	ESCUTCHEON ASSY, FROSTED PLATE	
105	X-4908-908-1	BUTTON ASSY, O/C	
106	7-685-134-14	SCREW +BTP 2.6X8 TYPE2 N-S	
107	X-4908-902-1	KNOB (C) ASSY	
108	4-908-916-01	FILTER	
109	*4-908-937-01	HOLDER, INDICATION TUBE	
110	*4-908-912-01	RETAINER (A)	
111	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S	
112	*4-908-913-01	RETAINER (B)	
113	4-908-955-01	BUTTON, MODE	
114	*4-908-945-01	RETAINER, KEY BOARD	

No.	Part No.	Description	Remarks
115	4-908-938-11	KNOB (A)	
116	4-908-932-01	ESCUTCHEON (A)	
117	4-908-933-01	ESCUTCHEON (B)	
118	2-387-701-11	TAPPING (B)(1.4X5)	
119	3-703-108-21	SCREW +BV 3X6, S TIGHT	
120	X-4908-907-1	KNOB (B), ASSY	
121	9-911-815-02	CUSHION	
122	9-911-837-XX	SPACER	
123	9-911-839-XX	PACKING, KNOB	
125	4-908-976-01	EMBLEM, DIGITAL OUTPUT	
905	*1-614-475-11	PC BOARD, KEY BOARD	
906	*1-614-476-11	PC BOARD, DISPLAY	
907	*1-614-480-21	PC BOARD, OPEN CLOSE SWITCH	
929	1-519-333-11	INDICATOR TUBE, FLUORESCENT	



The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks
151	*4-908-947-11	ANGLE (F)	
152	3-703-685-31	SCREW (+BV 3X8)	
153	*4-908-924-01	LEVER, POWER SWITCH	
154	4-866-342-00	JOINT (B), KNOB	
155	*4-908-942-01	ANGLE (RIGHT)	
156	*4-908-934-01	CHASSIS, TRANSFORMER	
157	7-682-547-09	SCREW +B 3X6	
158	*4-908-911-01	BRACKET, POWER SWITCH	
159	7-685-871-01	SCREW +BVTT 3X6 (S)	
160	4-820-330-21	SCREW, BW, PLUS MINUS	
161	4-886-828-00	(AEP,UK)...COVER, LFT	
162	4-374-846-01	(AEP,UK)...COVER, CAPACITOR, CAP TYPE	
	4-886-828-01	(AEP,UK)...COVER, LFT	
163	*4-908-944-41	PLATE, JACK	
164	3-703-244-00	BUSHING (2104), CORD	
165	7-685-146-19	SCREW +P 3X8 TYPE2 NON-SLIT	
166	7-621-284-30	SCREW +P 2.6X8	
167	*4-908-943-01	ANGLE (C)	
168	*4-908-941-11	ANGLE (LEFT)	
169	*4-908-936-01	HEAT SINK	

No.	Part No.	Description	Remarks
170	7-685-646-29	SCREW +BVTT 3X8 TYPE2 SLIT	
171	2-371-561-00	BUSHING (P), INSULATING	
172	*4-908-914-01	BRACKET (RIGHT), PANEL	
173	*4-908-962-01	SHEET (C), INSULATING	
174	*4-908-973-01	PLATE, SHIELD, D/O	
175	7-685-873-01	SCREW +BVTT 3X10 (S)	
176	4-908-961-01	WASHER	
177	7-621-284-30	SCREW +P 2.6X8	
178	*3-701-946-22	(US)....LABEL, FUSE	
179	4-854-741-00	CAP, DUST PROTECTION, P.J	
180	4-884-633-00	COVER, CONNECTOR	
181	4-908-991-01	ESCUTCHEON	
182	4-908-975-02	CASE, DIGITAL OUT	
183	*3-703-044-26	(US)....LABEL, CAUTION	
904	*1-615-817-11	PC BOARD, POWER SWITCH	
910	*1-614-483-21	PC BOARD, ACCESSORY PORT	
916	*1-533-131-00	(US).....HOLDER, FUSE	
920	⚠1-555-701-00	(US)....CORD, POWER	
	⚠1-555-795-00	(AEP)....CORD, POWER	
	⚠1-556-035-00	(UK)....CORD, POWER	
924	1-464-454-11	DIGITAL (I/O) UNIT	

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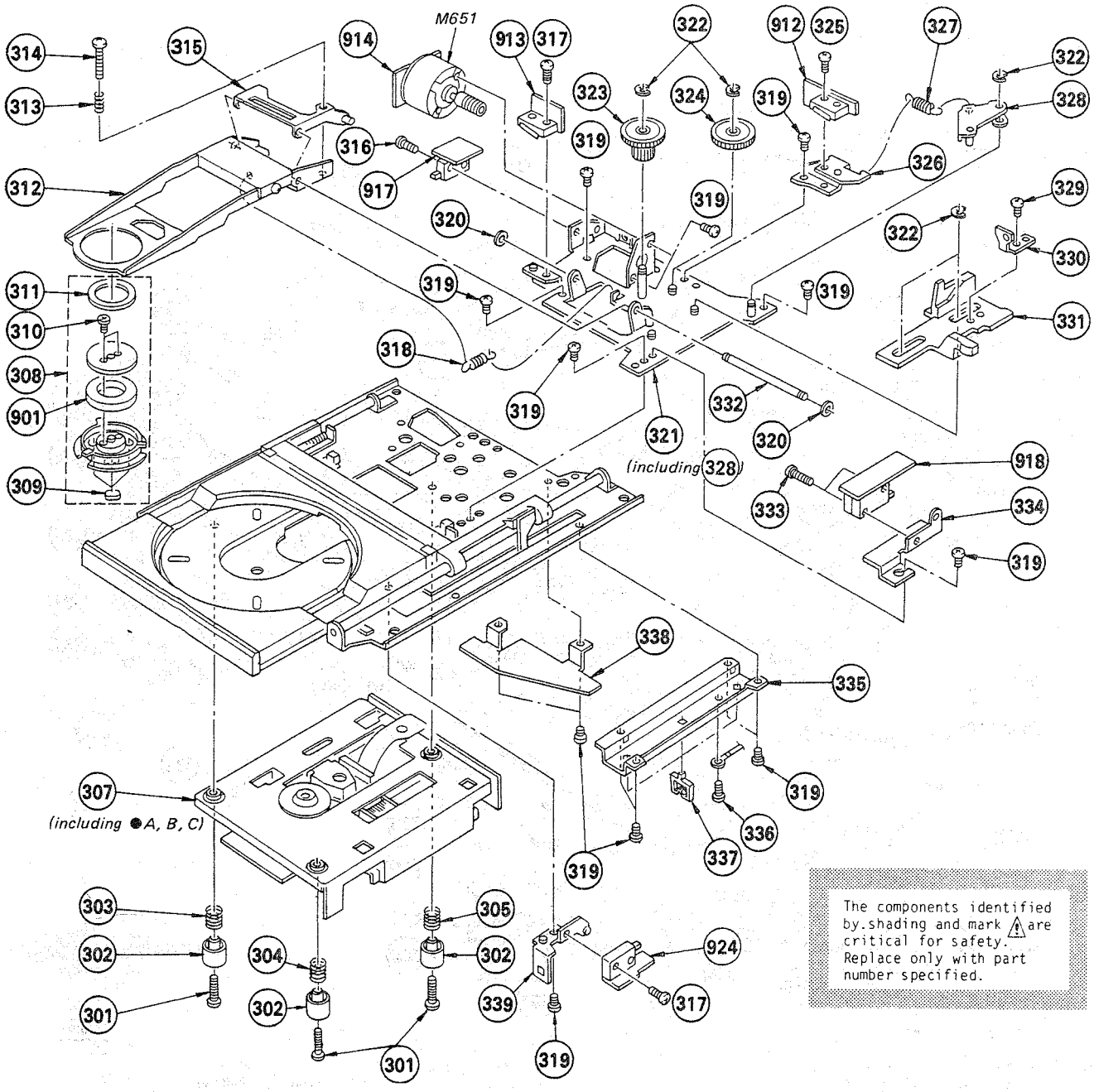
M651
(including ●A, B, C)
(including 328)
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	REMARKS
301	7-682-553-09	SCREW +B 3X20	
302	4-908-592-01	POLE (A), INSULATOR	
303	4-908-594-01	SPRING, COMPRESSION	
304	4-908-595-01	SPRING, COMPRESSION	
305	4-908-596-01	SPRING, COMPRESSION	
307 ⚠	X-4908-203-1	BU-1 (BASE UNIT)	
308	A-4675-077-A	PULLEY ASSY, PRESS	
309	4-908-537-01	FELT, PRESS	
310	4-908-618-01	SCREW (+BTP)(2X4)	
311	4-908-551-01	CUSHION	
312	*X-4908-510-1	ARM ASSY, C	
313	4-908-559-01	SPRING, COMPRESSION	
314	7-621-775-80	SCREW +B 2.6X16	
315	X-4908-513-1	PLATE ASSY, ADJUSTMENT, ARM	
316	7-685-864-01	SCREW +BVTT 2.6X10 (S)	
317	7-621-284-30	SCREW +P 2.6X8	
318	4-908-555-01	SPRING, TENSION (C ARM)	
319	7-621-259-10	SCREW +P 2.6X3	
320	3-558-708-21	WASHER, STOPPER	
321	*X-4908-509-1	CHASSIS ASSY, SUB	
322	7-624-106-04	STOP RING 3.0, TYPE -E	
323	4-908-528-01	GEAR (A)	
324	4-908-529-01	GEAR (B)	

No.	Part No.	Description	REMARKS
325	7-621-257-55	SCREW +P 2.3X8	
326	*4-908-522-01	BRACKET (B), SWITCH	
327	4-908-556-01	SPRING, TENSION (LOCK LEVER)	
328	*X-4908-504-1	LEVER ASSY, LOCK	
329	7-685-132-19	SCREW +BTP 2.6X8 TYPE2 N-S	
330	*4-908-521-01	PLATE, SWITCH	
331	4-908-570-01	CAM, C	
332	4-908-513-01	SHAFT, FULCRUM, C ARM	
333	7-621-259-80	SCREW +P 2.6X14	
334	*4-908-532-01	BRACKET (A), SWITCH	
335	*X-4908-517-1	COVER ASSY, ROPE	
336	7-685-871-04	SCREW +BVTT 3X6 (S)	
337	4-308-840-00	HOLDER, WIRE	
338	*4-908-597-01	COVER, BELT	
339	*4-908-541-01	BRACKET (C), SWITCH	
340	4-908-621-01	SHEET	
901	1-452-340-11	MAGNET	
912	*1-614-023-11	PC BOARD, L.C SW	
913	*1-614-024-11	PC BOARD, CHUCKING SW	
914	*1-614-025-11	PC BOARD, CHUCKING MOTOR	
917	*1-614-028-11	PC BOARD, LASER SW	
918	*1-614-029-11	PC BOARD, LOAD IN SW	
924	*1-614-030-11	PC BOARD, LOAD OUT SW	

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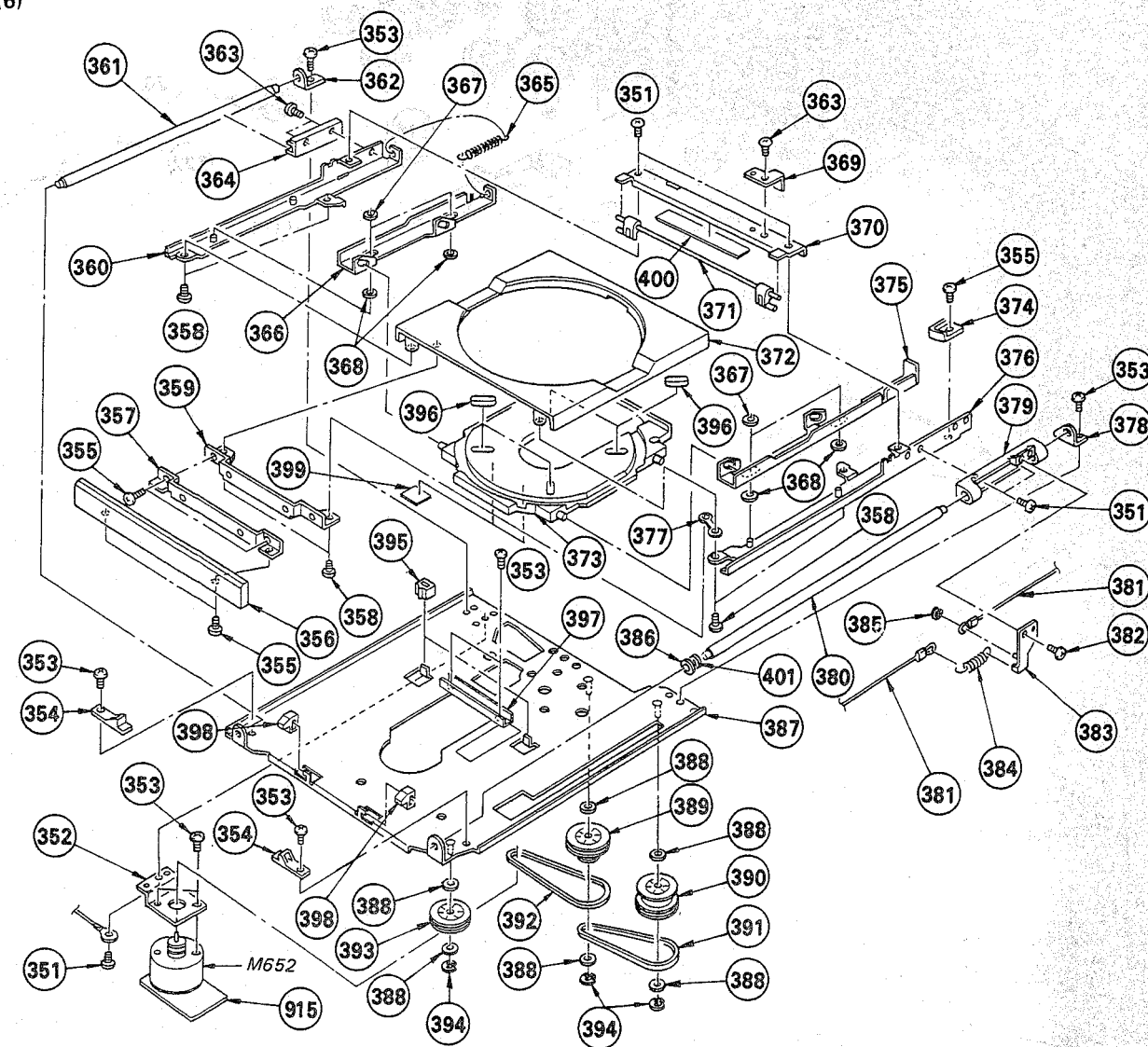

No.	Part No.	Description	REMARKS
351	7-685-870-09	SCREW +BVTT 3X5 (S)	
352	*4-908-523-01	BRACKET, MOTOR	
353	7-621-259-10	SCREW +P 2.6X3	
354	4-908-540-01	GUIDE, ASSIST	
355	7-621-775-20	SCREW +B 2.6X5	
356	4-908-978-01	PANEL, LOADING	
357	*4-908-539-01	BRACKET (B), LOADING PANEL	
358	7-685-646-29	SCREW +BVTP 3X8 TYPE2 SLIT	
359	*4-908-538-01	BRACKET (A), LOADING PANEL	
360	X-4908-508-1	PLATE ASSY (LEFT), SIDE, TABLE	
361	4-908-505-01	SHAFT (LEFT), GUIDE	
362	*4-908-530-01	PLATE (LEFT), BEARING	
363	7-685-861-09	SCREW +BVTT 2.6X5 (S)	
364	4-908-572-01	BEARING (LEFT), GUIDE	
365	4-908-552-01	SPRING, COMPRESSION	
366	*4-908-562-01	PLATE (LEFT), CAM, DISK	
367	3-558-708-21	WASHER, STOPPER	
368	3-701-439-11	WASHER	
369	*4-908-609-01	PLATE (B), GROUND	
370	*4-908-533-01	REINFORCEMENT, TABLE	
371	4-908-534-01	LEVER, FUNCTION	
372	4-908-584-01	TABLE, DISK	
373	X-4908-506-1	PLATE ASSY, DISK	
374	4-908-520-01	PLATE, LOCK	
375	*4-908-561-01	PLATE (RIGHT), CAM, DISK	
376	X-4908-507-1	PLATE ASSY (RIGHT), SIDE,TABLE	

No.	Part No.	Description	REMARKS
377	*4-908-608-01	PLATE (A), GROUND	
378	*4-908-531-01	PLATE (RIGHT), BEARING	
379	4-908-574-01	BEARING (RIGHT), GUIDE	
380	4-908-503-01	SHAFT (RIGHT), GUIDE	
381	4-908-544-01	ROPE	
382	7-685-132-19	SCREW +BTP 2.6X5 TYPE2 N-S	
383	*X-4908-502-1	BRACKET ASSY, ROPE	
384	4-908-553-01	SPRING, COMPRESSION (ROPE)	
385	7-624-104-04	STOP RING 2.0, TYPE -E	
386	4-908-550-01	STOPPER, RUBBER	
387	*X-4908-511-1	CHASSIS ASSY, MECHANICAL	
388	3-701-441-21	WASHER	
389	4-908-519-01	PULLEY (A)	
390	4-908-525-01	PULLEY (C)	
391	3-671-077-00	BELT, FF	
392	4-908-591-01	BELT, DRIVING	
393	4-908-524-01	PULLEY (B)	
394	7-624-106-04	STOP RING 3.0, TYPE -E	
395	4-887-175-00	RUBBER, STOPPER	
396	4-908-543-01	RETAINER, DISK	
397	*4-908-598-01	REINFORCEMENT, CHASSIS	
398	4-908-590-01	RETAINER, TABLE	
399	*4-908-964-01	SHEET, PS, DT	
400	*4-908-965-01	SHEET	
401	4-908-622-01	CUSHION (S)	
915	*1-614-026-11	PC BOARD, LOADING MOTOR	

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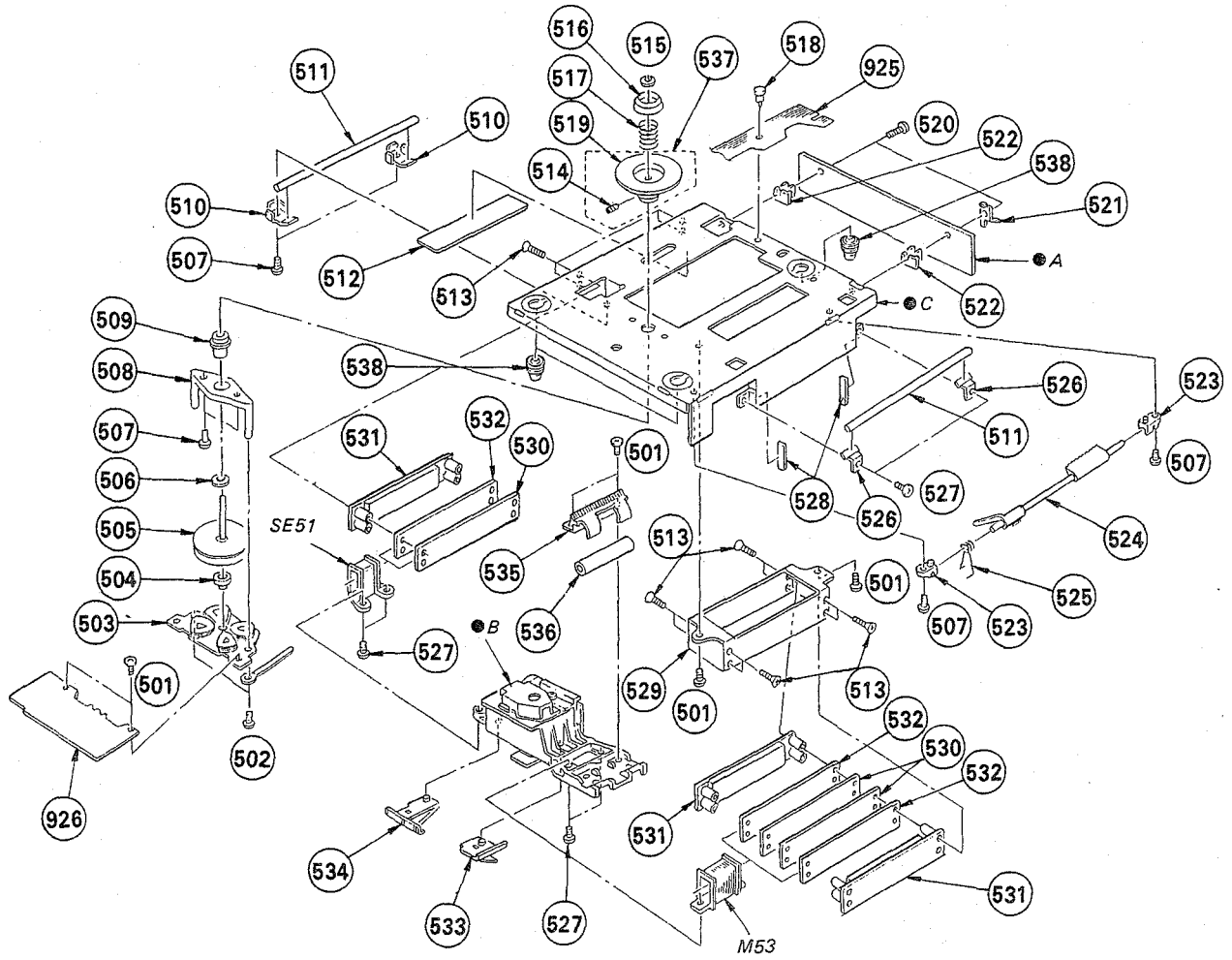

No.	Part No.	Description	REMARKS
501	7-621-775-10	SCREW +B 2.6X4	
502	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
503	A-4675-068-A	BRACKET ASSY, MOTOR (L151,152)	
504	2-622-105-01	RETAINER, THRUST	
505	A-4675-069-A	ROTOR ASSY	
506	3-701-439-21	WASHER	
507	7-621-773-95	SCREW +B 2.6X6	
508	4-908-216-01	HOLDER, STATOR	
509	4-908-206-01	BEARING, SPINDLE	
510	4-908-205-01	RETAINER (A), SLIDE SHAFT	
511	4-908-201-01	SHAFT, SLIDE	
512	2-270-836-00	RUBBER, RETAINER	
513	7-621-559-80	SCREW +K 2.6X14	
514	7-621-734-09	SET-SCT, HEX. 2.6X3	
515	3-558-708-21	WASHER, STOPPER	
516	4-908-212-01	CAP, CENTERING	
517	4-908-213-01	SPRING, COMPRESSION	
518	3-531-576-01	RIVET	
519	4-908-211-02	PULLEY, DISK	
520	7-621-259-65	SCREW +P 2.6X10	

No.	Part No.	Description	REMARKS
521	*4-908-232-01	LUG	
522	4-908-222-01	HOLDER, PC BOARD	
523	4-908-220-01	HOLDER, ROD	
524	4-908-227-01	LEVER, LOCK	
525	4-908-230-01	SPRING	
526	4-908-217-01	RETAINER (B), SLIDE SHAFT	
527	7-621-775-20	SCREW +B 2.6X5	
528	*3-548-366-02	CUSHION	
529	4-908-203-01	YOKE (A)	
530	4-908-214-01	YOKE (C)-1	
531	A-4675-070-A	MAGNET ASSY, LINEAR	
532	4-908-215-01	YOKE (C)-2	
533	4-908-225-01	RETAINER (A), LEAD	
534	4-908-219-01	RETAINER (B), LEAD	
535	4-908-224-01	HOLDER, BEARING	
536	4-908-221-01	BEARING	
537	X-4908-202-1	PULLEY ASSY, DISK	
538	4-908-593-01	INSULATOR	
925	A-4646-215-A	MOUNTED PCB, FLEXIBLE	
926	1-614-086-11	PC BOARD, BSL MOTOR	

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
· All resistors are in ohms.
· F : nonflammable

COILS
· MMH : mH, UH : μH

SEMICONDUCTORS
In each case, μ : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	1-452-340-11	MAGNET
902	*1-614-477-12	PC BOARD, DIGITAL OUT
903	*1-614-969-21	PC BOARD, LINE OUT
904	*1-615-817-11	PC BOARD, POWER SWITCH
905	*1-614-475-11	PC BOARD, KEY BOARD
906	*1-614-476-11	PC BOARD, DISPLAY
907	*1-614-480-21	PC BOARD, OPEN CLOSE SWITCH
908	*1-614-481-21	PC BOARD, REMOTE CONTROL VR
909	*1-614-482-21	PC BOARD, REMOTE CONTROL MOTOR
910	*1-614-483-21	PC BOARD, ACCESSORY PORT
911	*1-560-242-11	BUS BAR 3P
912	*1-614-023-11	PC BOARD, L.C SW
913	*1-614-024-11	PC BOARD, CHACKING SW
914	*1-614-025-11	PC BOARD, CHACKING MOTOR
915	*1-614-026-11	PC BOARD, LOADING MOTOR
916	*1-533-131-00	(US).....HOLDER, FUSE
917	*1-614-028-11	PC BOARD, LASER SW
918	*1-614-029-11	PC BOARD, LOAD IN SW
919	*1-614-030-11	PC BOARD, LOAD OUT SW
920	⚠1-555-701-00	(US)....CORD, POWER
	⚠1-555-795-00	(AEP)...CORD, POWER
	⚠1-556-035-00	(UK)....CORD, POWER
921	*1-611-717-11	PC BOARD, N
922	*A-4619-275-A	MOUNTED PCB, SERVO
923	*A-4651-046-A	MOUNTED PCB, AUDIO
924	1-464-454-11	DIGITAL (I/O) UNIT
925	A-4646-215-A	MOUNTED PCB, FLEXIBLE
926	1-614-086-11	PC BOARD, BSL MOTOR
929	1-519-333-11	INDICATOR TUBE, FLUORESCENT

Ref.No.	Part No.	Description			
C201	⚠1-161-744-00	CERAMIC	0.01MF		400V
C202	1-161-742-00	(AEP,UK)...CERAMIC	0.0022		400V
C203	1-161-742-00	(AEP,UK)...CERAMIC	0.0022		400V
C204	1-161-742-00	(AEP,UK)...CERAMIC	0.0022		400V
C205	1-161-742-00	(AEP,UK)...CERAMIC	0.0022		400V
C206	⚠1-161-744-00	CERAMIC	0.01MF		400V
C207	⚠1-161-744-00	CERAMIC	0.01MF		400V
C301	1-104-239-00	POLYSTYRENE	0.0015MF	5%	125V
C302	1-107-322-00	MICA	22PF	5%	500V
C303	1-131-450-00	TANTALUM	1MF	20%	50V
C304	1-123-336-00	ELECT	47QMF	20%	25V
C305	1-104-266-00	POLYSTYRENE	180PF	5%	500V
C307	1-131-450-00	TANTALUM	1MF	20%	50V
C308	1-130-960-00	FILM	0.01MF	2%	100V
C309	1-110-193-11	MYLAR	0.01MF	10%	160V
C310	1-123-373-00	ELECT	47MF	20%	63V
C351	1-131-380-00	TANTALUM	33MF	10%	10V
C352	1-162-294-31	CERAMIC	0.001MF	10%	50V
C353	1-131-526-00	TANTALUM	33MF	20%	10V
C354	1-131-450-00	TANTALUM	1MF	20%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C355	1-123-334-00	ELECT	220MF	20%	25V
C356	1-102-523-00	CERAMIC	56PF	5%	50V
C357	1-102-514-00	CERAMIC	22PF	5%	50V
C358	1-162-294-31	CERAMIC	0.001MF	10%	50V
C359	1-131-526-00	TANTALUM	33MF	20%	10V
C360	1-123-334-00	ELECT	220MF	20%	25V
C361	1-131-526-00	TANTALUM	33MF	20%	10V
C362	1-131-450-00	TANTALUM	1MF	20%	50V
C363	1-131-450-00	TANTALUM	1MF	20%	50V
C364	1-131-450-00	TANTALUM	1MF	20%	50V
C365	1-131-450-00	TANTALUM	1MF	20%	50V
C368	1-101-005-00	CERAMIC	0.022MF		50V
C369	1-101-005-00	CERAMIC	0.022MF		50V
C370	1-131-450-00	TANTALUM	1MF	20%	50V
C371	1-136-327-11	FILM	0.0027MF	2%	100V
C372	1-130-163-00	FILM	0.0011MF	3%	100V
C373	1-130-967-00	FILM	0.0027MF	3%	100V
C374	1-130-163-00	FILM	0.0011MF	3%	100V
C375	1-130-967-00	FILM	0.0027MF	3%	100V
C376	1-130-163-00	FILM	0.0011MF	3%	100V
C377	1-130-967-00	FILM	0.0027MF	3%	100V
C378	1-136-327-11	FILM	0.0027MF	2%	100V
C383	1-161-974-00	CERAMIC	0.1MF	20%	16V
C501	1-136-163-00	FILM	0.068MF	5%	50V
C502	1-162-304-31	CERAMIC	0.0047MF	30%	16V
C503	1-130-487-00	MYLAR	0.022MF	5%	50V
C504	1-123-343-00	ELECT	33MF	20%	25V
C505	1-123-343-00	ELECT	33MF	20%	25V
C506	1-123-343-00	ELECT	33MF	20%	25V
C507	1-123-343-00	ELECT	33MF	20%	25V
C510	1-136-165-00	FILM	0.1MF	5%	50V
C511	1-123-343-00	ELECT	33MF	20%	25V
C512	1-123-343-00	ELECT	33MF	20%	25V
C521	1-130-475-00	MYLAR	0.0022MF	5%	50V
C522	1-130-475-00	MYLAR	0.0022MF	5%	50V
C523	1-130-487-00	MYLAR	0.022MF	5%	50V
C524	1-162-291-31	CERAMIC	560PF	10%	50V
C525	1-136-165-00	FILM	0.1MF	5%	50V
C526	1-130-471-00	MYLAR	0.001MF	5%	50V
C527	1-136-169-00	FILM	0.22MF	5%	50V
C528	1-136-161-00	FILM	0.047MF	5%	50V
C529	1-136-159-00	FILM	0.033MF	5%	50V
C530	1-162-294-31	CERAMIC	0.001MF	10%	50V
C531	1-130-475-00	MYLAR	0.0022MF	5%	50V
C532	1-162-290-31	CERAMIC	470PF	10%	50V
C533	1-136-165-00	FILM	0.1MF	5%	50V
C534	1-136-169-00	FILM	0.22MF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C535	1-130-475-00	MYLAR	0.0022MF	5%	50V
C537	1-136-161-00	FILM	0.047MF	5%	50V
C541	1-123-343-00	ELECT	33MF	20%	25V
C542	1-131-371-00	TANTALUM	10MF	10%	16V
C543	1-123-343-00	ELECT	33MF	20%	25V
C548	1-131-369-00	TANTALUM	4.7MF	10%	16V
C571	1-162-294-31	CERAMIC	0.001MF	10%	50V
C572	1-162-294-31	CERAMIC	0.001MF	10%	50V
C601	1-131-450-00	TANTALUM	1MF	20%	50V
C602	1-131-380-00	TANTALUM	33MF	20%	10V
C603	1-131-380-00	TANTALUM	33MF	20%	10V
C605	1-136-169-00	FILM	0.22MF	5%	50V
C606	1-123-228-00	ELECT	1MF	20%	50V
C607	1-136-165-00	FILM	0.1MF	5%	50V
C608	1-130-481-00	MYLAR	0.0068MF	5%	50V
C609	1-162-290-31	CERAMIC	470PF	10%	50V
C610	1-102-647-00	CERAMIC	39PF	5%	50V
C611	1-102-658-00	CERAMIC	180PF	5%	50V
C612	1-102-725-00	CERAMIC	36PF	5%	50V
C613	1-162-302-31	CERAMIC	0.0022MF	30%	16V
C614	1-162-302-31	CERAMIC	0.0022MF	30%	16V
C615	1-136-153-00	FILM	0.01MF	5%	50V
C616	1-124-186-00	ELECT	10MF	20%	50V
C617	1-123-611-00	ELECT	1MF	20%	50V
C618	1-136-153-00	FILM	0.01MF	5%	50V
C619	1-136-165-00	FILM	0.1MF	5%	50V
C620	1-131-380-00	TANTALUM	33MF	20%	10V
C621	1-123-343-00	ELECT	33MF	20%	25V
C622	1-123-343-00	ELECT	33MF	20%	25V
C651	1-136-157-00	FILM	0.022MF	5%	50V
C652	1-136-157-00	FILM	0.022MF	5%	50V
C653	1-136-157-00	FILM	0.022MF	5%	50V
C654	1-130-479-00	MYLAR	0.0047MF	5%	50V
C655	1-130-479-00	MYLAR	0.0047MF	5%	50V
C701	1-131-380-00	TANTALUM	33MF	20%	10V
C704	1-131-380-00	TANTALUM	33MF	20%	10V
C705	1-162-284-31	CERAMIC	150PF	10%	50V
C706	1-162-284-31	CERAMIC	150PF	10%	50V
C707	1-162-294-31	CERAMIC	0.001MF	10%	50V
C708	1-162-294-31	CERAMIC	0.001MF	10%	50V
C709	1-162-306-31	CERAMIC	0.01MF	20%	16V
C710	1-131-380-00	TANTALUM	33MF	20%	10V
C711	1-131-380-00	TANTALUM	33MF	20%	10V
C712	1-161-055-00	CERAMIC	0.022MF	20%	25V
C721	1-161-974-00	CERAMIC	0.1MF	20%	16V
C722	1-161-055-00	CERAMIC	0.022MF	20%	25V
C723	1-161-055-00	CERAMIC	0.022MF	20%	25V
C730	1-123-307-00	ELECT	100MF	20%	6.3V
C731	1-123-307-00	ELECT	100MF	20%	6.3V
C751	1-123-325-00	ELECT	2200MF	20%	10V
C752	1-131-380-00	TANTALUM	33MF	20%	10V
C753	1-123-343-00	ELECT	33MF	20%	25V
C754	1-136-153-00	FILM	0.01MF	5%	50V
C755	1-131-380-00	TANTALUM	33MF	20%	10V
C756	1-131-380-00	TANTALUM	33MF	20%	10V

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C757	1-131-380-00	TANTALUM	33MF	20%	10V
C758	1-162-302-31	CERAMIC	0.0022MF	30%	16V
C759	1-162-302-31	CERAMIC	0.0022MF	30%	16V
C760	1-162-302-31	CERAMIC	0.0022MF	30%	16V
C761	1-162-302-31	CERAMIC	0.0022MF	30%	16V
C762	1-161-773-91	CERAMIC	0.1MF	20%	25V
C763	1-131-450-00	TANTALUM	1MF	20%	50V
C764	1-131-520-00	TANTALUM	22MF	20%	16V
C801	1-131-374-00	TANTALUM	33MF	20%	16V
C802	1-161-055-00	CERAMIC	0.022MF	20%	25V
C851	1-123-611-00	ELECT	1MF	20%	50V
C852	1-123-613-00	ELECT	3.3MF	20%	50V
C853	1-162-288-31	CERAMIC	330PF	10%	50V
C854	1-123-821-00	ELECT	47MF	20%	16V
C901	⚠1-123-842-00	ELECT	3300MF	20%	25V
C902	1-107-325-00	MICA	10PF	0.5PF	500V
C903	1-123-345-00	ELECT	100MF	20%	35V
C904	1-123-624-00	ELECT	470MF	20%	120V
C905	1-123-380-00	ELECT	1MF	20%	50V
C906	1-123-345-00	ELECT	100MF	20%	35V
C907	1-123-380-00	ELECT	1MF	20%	50V
C908	1-123-343-00	ELECT	33MF	20%	25V
C909	1-131-450-00	TANTALUM	1MF	20%	50V
C911	1-124-178-00	ELECT	2200MF	20%	25V
C921	⚠1-123-327-00	ELECT	4700MF	20%	16V
C922	1-131-450-00	TANTALUM	1MF	20%	50V
C923	1-123-311-00	ELECT	1000MF	20%	10V
C951	⚠1-123-842-00	ELECT	3300MF	20%	25V
C952	1-107-325-00	MICA	10PF	0.5PF	500V
C953	1-123-345-00	ELECT	100MF	20%	35V
C954	1-123-624-00	ELECT	470MF	20%	120V
C955	1-123-380-00	ELECT	1MF	20%	50V
C956	1-123-345-00	ELECT	100MF	20%	35V
C957	1-123-380-00	ELECT	1MF	20%	50V
C958	1-123-343-00	ELECT	33MF	20%	25V
C959	1-131-450-00	TANTALUM	1MF	20%	50V
C971	⚠1-123-327-00	ELECT	4700MF	20%	16V
C972	1-131-450-00	TANTALUM	1MF	20%	50V
C973	1-123-311-00	ELECT	1000MF	20%	10V
C981	1-130-691-00	FILM	1MF	10%	125V
C982	1-136-165-00	FILM	0.1MF	5%	50V
C991	1-123-335-00	ELECT	330MF	20%	25V
C992	1-124-530-00	ELECT	100MF	20%	50V
C993	1-124-346-00	ELECT	220MF	20%	35V
C994	1-131-347-00	TANTALUM	1MF	10%	35V
C995	1-123-617-00	ELECT	10MF	20%	16V

CNJ302	*1-564-505-11	PLUG, CONNECTOR 2P
CNJ303	*1-564-505-21	PLUG, CONNECTOR 2P
CNJ305	*1-564-507-11	PLUG, CONNECTOR 4P
CNJ306	*1-564-507-11	PLUG, CONNECTOR 4P
CNJ307	*1-564-507-21	PLUG, CONNECTOR 4P
CNJ354	*1-564-519-11	PLUG, CONNECTOR 4P
CNJ501	1-564-711-11	PIN, CONNECTOR (SMALL TYPE) 9P
CNJ502	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CNJ503	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CNJ504	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
CNJ505	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CNJ601	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CNJ602*1	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P
CNJ603*1	1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P
CNJ604*1	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CNJ605*1	1-564-708-21	PIN, CONNECTOR (SMALL TYPE) 6P
CNJ701*1	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CNJ702*1	1-564-706-41	PIN, CONNECTOR (SMALL TYPE) 4P
CNJ703*1	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P
CNJ704 1	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CNJ705*1	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P
CNJ706*1	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P
CNJ707*1	1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P
CNJ708*1	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CNJ709*1	1-564-705-31	PIN, CONNECTOR (SMALL TYPE) 3P
CNJ710*1	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P
CNJ711*1	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P
CNJ712*1	1-564-704-31	PIN, CONNECTOR (SMALL TYPE) 2P
CNJ765*1	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P
CNJ769*1	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P
CNP601*1	1-564-519-11	PLUG, CONNECTOR 4P
CNP602*1	1-564-505-11	PLUG, CONNECTOR 2P
CNP603*1	1-564-505-21	PLUG, CONNECTOR 2P
CNP604*1	1-564-505-31	PLUG, CONNECTOR 2P
CNP605*1	1-564-505-41	PLUG, CONNECTOR 2P
CNP606*1	1-564-506-11	PLUG, CONNECTOR 3P
CNP607*1	1-564-517-11	PLUG, CONNECTOR 2P
D301	8-719-910-65	DIODE HZ6B2L
D302	8-719-224-12	DIODE 10YD1.3
D401	8-719-910-65	DIODE HZ6B2L
D402	8-719-224-12	DIODE 10YD1.3
D501	8-719-911-19	DIODE 1SS119
D504	8-719-951-13	DIODE HZ5CLL
D505	8-719-911-19	DIODE 1SS119
D507	8-719-101-32	DIODE RD2.7E-L1
D508	8-719-911-19	DIODE 1SS119
D601	8-719-902-79	DIODE KV1236Z
D651	8-719-200-02	DIODE 10E-2
D652	8-719-200-02	DIODE 10E-2
D653	8-719-200-02	DIODE 10E-2
D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119
D703	8-719-200-02	DIODE 10E-2
D704	8-719-910-24	DIODE HZ12B1L
D705	8-719-911-19	DIODE 1SS119
D706	8-719-911-19	DIODE 1SS119
D710	8-719-911-19	DIODE 1SS119
D801	8-719-911-19	DIODE 1SS119
D802	8-719-911-19	DIODE 1SS119
D803	8-719-911-19	DIODE 1SS119
D804	8-719-911-19	DIODE 1SS119
D805	8-719-911-19	DIODE 1SS119
D806	8-719-911-19	DIODE 1SS119
D807	8-719-922-25	DIODE PG2222SY
D811	8-719-922-24	DIODE BR2222S
D812	8-719-900-28	DIODE EBG3432S
D813	8-719-934-34	DIODE AA3432S
D851	8-719-110-32	DIODE PH302B

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
D901	8-719-200-68	DIODE C10P20FU
D902	8-719-200-69	DIODE C10P20FUR
D905	8-719-224-11	DIODE 10YD2.4A
D906	8-719-902-87	DIODE EQB01-08Q
D921	8-719-200-31	DIODE 21DQ05
D922	8-719-200-31	DIODE 21DQ05
D923	8-719-200-31	DIODE 21DQ05
D924	8-719-200-31	DIODE 21DQ05
D955	8-719-224-11	DIODE 10YD2.4A
D956	8-719-902-87	DIODE EQB01-08Q
D991 ⚠	8-719-911-19	DIODE 1SS119
D992 ⚠	8-719-911-19	DIODE 1SS119
D993	8-719-911-19	DIODE 1SS119
D994	8-719-200-02	DIODE 10E-2
D995	8-719-200-02	DIODE 10E-2
D996	8-719-100-35	DIODE RD5.1E-B1
D997	8-719-100-98	DIODE RD30E-B2
F201 ⚠	1-532-555-00	(US)..FUSE, GLASS TUBE
IC301	8-759-993-53	IC LF353H
IC302	8-759-900-72	IC NE5532P
IC303	8-759-900-72	IC NE5532P
IC304	8-759-900-72	IC NE5532P
IC351	8-759-202-13	IC TC74HCU04P
IC352	8-752-015-20	IC CX20152
IC353	8-759-801-74	IC CX20198
IC355	8-759-140-53	IC UPD4053BC
IC401	8-759-993-53	IC LF353H
IC402	8-759-900-72	IC NE5532P
IC403	8-759-900-72	IC NE5532P
IC404	8-759-900-72	IC NE5532P
IC501	8-752-010-80	IC CX20108
IC502	8-759-700-58	IC NJM4558D-FA
IC503	8-759-600-02	IC M5218L
IC601	8-759-912-52	IC CX23035
IC602	8-759-913-72	IC MB8416-20LPF
IC603	8-759-912-53	IC CX23034
IC604	8-759-990-82	IC TL082CP
IC701	8-759-915-42	IC MSM6404A-45RS
IC702	8-759-915-52	IC MSM6404A-46RS
IC703	8-759-602-25	IC M50760-414P
IC704	8-759-220-04	IC TC40H004P
IC705	8-759-600-24	IC M54543L
IC751	8-759-915-25	IC CX23033
IC752	8-759-901-93	IC SN74LS193N
IC753	8-759-202-13	IC TC74HCU04P
IC754	8-759-220-00	IC TC40H000P
IC755	8-759-220-04	IC TC40H004P
IC801	8-759-600-48	IC M50782SP
IC802	8-759-812-90	IC LB1290
IC803	8-759-812-90	IC LB1290
IC804	8-759-800-76	IC LB1245
IC851	8-752-010-60	IC CX20106
IC901	8-759-700-11	IC NJM78M05A
IC902	8-759-170-12	IC UPC78M12H
IC903	8-759-700-24	IC NJM79M12A
IC921	8-759-700-51	IC NJM7805A
IC951	8-759-700-20	IC NJM79M05A
IC971	8-759-700-28	IC NJM7905A

ELECTRICAL PARTS

Ref.No.	Part No.	Description
J251	1-562-042-00	SOCKET, CONNECTOR 26P
L201 ⚠	1-421-340-11	(AEP,UK)..TRANSFORMER, LINE FILTER
L201 ⚠	1-421-580-00	(US).....TRANSFORMER, LINE FILTER(LFT)
L701	1-408-117-00	MICRO INDUCTOR 10UH
L702	1-408-117-00	MICRO INDUCTOR 10UH
L703	1-408-117-00	MICRO INDUCTOR 10UH
L751	1-408-117-00	MICRO INDUCTOR 10UH
L752	1-408-117-00	MICRO INDUCTOR 10UH
L753	1-408-117-00	MICRO INDUCTOR 10UH
Q301	8-769-163-00	TRANSISTOR 2SK152-3
Q401	8-769-163-00	TRANSISTOR 2SK152-3
Q501	8-729-117-54	TRANSISTOR 2SA1175
Q502	8-729-100-13	TRANSISTOR 2SC2001
Q503	8-729-177-43	TRANSISTOR 2SD774-3
Q504	8-729-103-43	TRANSISTOR 2SB734-3
Q505	8-729-177-43	TRANSISTOR 2SD774-3
Q506	8-729-103-43	TRANSISTOR 2SB734-3
Q507	8-729-177-43	TRANSISTOR 2SD774-3
Q508	8-729-103-43	TRANSISTOR 2SB734-3
Q509	8-729-177-43	TRANSISTOR 2SD774-3
Q510	8-729-103-43	TRANSISTOR 2SB734-3
Q511	8-729-900-74	TRANSISTOR DTC143TS
Q512	8-729-900-74	TRANSISTOR DTC143TS
Q513	8-729-900-89	TRANSISTOR DTC144ES
Q601	8-729-900-89	TRANSISTOR DTC114ES
Q701	8-729-117-54	TRANSISTOR 2SA1175
Q702	8-729-178-54	TRANSISTOR 2SC2785
Q703	8-729-178-54	TRANSISTOR 2SC2785
Q705	8-729-901-57	TRANSISTOR DTC143XS
Q706	8-729-178-54	TRANSISTOR 2SC2785
Q707	8-729-900-80	TRANSISTOR DTC114ES
Q801	8-729-900-80	TRANSISTOR DTC114ES
Q802	8-729-900-80	TRANSISTOR DTC114ES
Q803	8-729-900-80	TRANSISTOR DTC114ES
Q804	8-729-900-80	TRANSISTOR DTC114ES
Q805	8-729-900-80	TRANSISTOR DTC114ES
Q806	8-729-900-80	TRANSISTOR DTC114ES
Q901	8-729-127-53	TRANSISTOR 2SC2275
Q902	8-729-167-62	TRANSISTOR 2SC2676
Q903	8-729-113-82	TRANSISTOR 2SA1138
Q904	8-729-167-62	TRANSISTOR 2SC2676
Q951	8-729-118-53	TRANSISTOR 2SA985-P
Q952	8-729-113-82	TRANSISTOR 2SA1138
Q953	8-729-167-62	TRANSISTOR 2SC2676
Q954	8-729-113-82	TRANSISTOR 2SA1138
Q991	8-729-178-54	TRANSISTOR 2SC2785
Q992	8-729-177-44	TRANSISTOR 2SD774

Ref.No.	Part No.				
R301	1-214-880-00	METAL	4.7K	1%	1/2W
R302	1-214-737-00	METAL	2.2K	1%	1/4W
R303	1-214-878-00	METAL	3.9K	1%	1/2W
R304	1-214-888-00	METAL	10K	1%	1/2W
R305	1-214-729-00	METAL	1K	1%	1/4W
R306	1-214-729-00	METAL	1K	1%	1/4W
R307	1-214-875-00	METAL	3K	1%	1/2W
R308	1-214-870-00	METAL	1.8K	1%	1/2W
R309	1-214-845-11	METAL	160	1%	1/2W
R310	1-214-880-00	METAL	4.7K	1%	1/2W
R311	1-214-928-00	METAL	470K	1%	1/2W
R312	1-214-924-00	METAL	300K	1%	1/2W
R313	1-214-840-00	METAL	100	1%	1/2W
R331	1-214-852-00	METAL	330	1%	1/2W
R332	1-214-852-00	METAL	330	1%	1/2W
R333	1-214-723-00	METAL	560	1%	1/4W
R351	1-247-871-00	CARBON	47K	5%	1/6W
R353	1-214-733-00	METAL	1.5K	1%	1/4W
R354	1-214-903-00	METAL	39K	1%	1/2W
R357	1-247-807-00	CARBON	100	5%	1/6W
R371	1-214-913-00	METAL	100K	1%	1/2W
R372	1-214-870-00	METAL	1.8K	1%	1/2W
R373	1-214-743-00	METAL	3.9K	1%	1/4W
R374	1-214-727-00	METAL	820	1%	1/4W
R375	1-214-734-00	METAL	1.6K	1%	1/4W
R376	1-214-878-00	METAL	3.9K	1%	1/2W
R377	1-214-742-00	METAL	3.6K	1%	1/4W
R378	1-214-727-00	METAL	820	1%	1/4W
R379	1-214-736-00	METAL	2K	1%	1/4W
R380	1-214-878-00	METAL	3.9K	1%	1/2W
R381	1-214-743-00	METAL	3.9K	1%	1/4W
R382	1-214-727-00	METAL	820	1%	1/4W
R383	1-214-734-00	METAL	1.6K	1%	1/4W
R384	1-214-870-00	METAL	1.8K	1%	1/2W
R385	1-214-907-00	METAL	56K	1%	1/2W
R386	1-214-907-00	METAL	56K	1%	1/2W
R502	1-247-883-00	CARBON	150K	5%	1/6W
R503	1-247-899-00	CARBON	680K	5%	1/6W
R504	1-247-845-00	CARBON	3.9K	5%	1/6W
R505	1-247-815-00	CARBON	220	5%	1/6W
R506	1-247-855-00	CARBON	10K	5%	1/6W
R507	1-247-859-00	CARBON	15K	5%	1/6W
R508	1-247-831-00	CARBON	1K	5%	1/6W
R509	1-247-895-00	CARBON	470K	5%	1/6W
R510	1-249-421-11	CARBON	2.2K	5%	1/6W
R511	1-247-855-00	CARBON	10K	5%	1/6W
R512	1-247-855-00	CARBON	10K	5%	1/6W
R513	1-247-863-00	CARBON	22K	5%	1/6W
R514	1-247-859-00	CARBON	15K	5%	1/6W
R515	1-247-841-00	CARBON	2.7K	5%	1/6W
R516	1-247-869-00	CARBON	39K	5%	1/6W
R519	1-247-843-00	CARBON	3.3K	5%	1/6W
R531	1-247-903-00	CARBON	1M	5%	1/6W
R532	1-247-807-00	CARBON	100	5%	1/6W
R533	1-247-831-00	CARBON	1K	5%	1/6W
R534	1-247-869-00	CARBON	39K	5%	1/6W
R535	1-247-865-00	CARBON	27K	5%	1/6W
R536	1-247-863-00	CARBON	22K	5%	1/6W
R538	1-247-837-00	CARBON	1.8K	5%	1/6W
R539	1-247-879-00	CARBON	100K	5%	1/6W
R540	1-247-855-00	CARBON	10K	5%	1/6W
R541	1-247-859-00	CARBON	15K	5%	1/6W
R542	1-247-831-00	CARBON	1K	5%	1/6W
R543	1-247-851-00	CARBON	6.8K	5%	1/6W

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ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R544	1-247-867-00	CARBON	33K	5%	1/6W
R545	1-247-863-00	CARBON	22K	5%	1/6W
R551	1-247-807-00	CARBON	100	5%	1/6W
R552	1-247-847-00	CARBON	4.7K	5%	1/6W
R553	1-247-819-00	CARBON	330	5%	1/6W
R554	1-247-865-00	CARBON	27K	5%	1/6W
R555	1-247-851-00	CARBON	6.8K	5%	1/6W
R556	1-247-863-00	CARBON	22K	5%	1/6W
R561	1-247-864-00	CARBON	24K	5%	1/6W
R562	1-247-851-00	CARBON	6.8K	5%	1/6W
R563	1-247-855-00	CARBON	10K	5%	1/6W
R564	1-247-871-00	CARBON	47K	5%	1/6W
R571	1-247-885-00	CARBON	180K	5%	1/6W
R572	1-247-881-00	CARBON	120K	5%	1/6W
R573	1-247-881-00	CARBON	120K	5%	1/6W
R574	1-247-885-00	CARBON	180K	5%	1/6W
R601	1-247-843-00	CARBON	3.3K	5%	1/6W
R602	1-215-441-00	METAL	6.8K	1%	1/6W
R603	1-247-856-00	CARBON	11K	5%	1/6W
R604	1-215-441-00	METAL	6.8K	1%	1/6W
R605	1-247-903-00	CARBON	1M	5%	1/6W
R606	1-247-856-00	CARBON	11K	5%	1/6W
R607	1-247-863-00	CARBON	22K	5%	1/6W
R608	1-215-453-00	METAL	22K	1%	1/6W
R609	1-247-887-00	CARBON	220K	5%	1/6W
R610	1-247-869-00	CARBON	39K	5%	1/6W
R611	1-215-449-00	METAL	15K	1%	1/6W
R621	1-247-879-00	CARBON	100K	5%	1/6W
R622	1-247-879-00	CARBON	100K	5%	1/6W
R623	1-247-831-00	CARBON	1K	5%	1/6W
R624	1-247-879-00	CARBON	100K	5%	1/6W
R625	1-247-851-00	CARBON	6.8K	5%	1/6W
R626	1-215-453-00	METAL	22K	1%	1/6W
R627	1-247-867-00	CARBON	33K	5%	1/6W
R628	1-247-857-00	CARBON	12K	5%	1/6W
R629	1-215-453-00	METAL	22K	1%	1/6W
R630	1-247-841-00	CARBON	2.7K	5%	1/6W
R631	1-247-847-00	CARBON	4.7K	5%	1/6W
R632	1-247-863-00	CARBON	22K	5%	1/6W
R633	1-247-855-00	CARBON	10K	5%	1/6W
R634	1-247-855-00	CARBON	10K	5%	1/6W
R702	1-247-879-00	CARBON	100K	5%	1/6W
R703	1-247-903-00	CARBON	1M	5%	1/6W
R705	1-247-847-00	CARBON	4.7K	5%	1/6W
R706	1-247-855-00	CARBON	10K	5%	1/6W
R707	1-247-863-00	CARBON	22K	5%	1/6W
R708	1-247-903-00	CARBON	1M	5%	1/6W
R709	1-247-842-00	CARBON	3K	5%	1/6W
R710	1-247-863-00	CARBON	22K	5%	1/6W
R711	1-247-863-00	CARBON	22K	5%	1/6W
R715	1-247-855-00	CARBON	10K	5%	1/6W
R720	1-247-809-00	CARBON	120	5%	1/6W
R751	1-247-863-00	CARBON	22K	5%	1/6W
R752	1-247-879-00	CARBON	100K	5%	1/6W
R754	1-247-863-00	CARBON	22K	5%	1/6W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R801	1-247-811-00	CARBON	150	5%	1/6W
R802	1-247-813-00	CARBON	180	5%	1/6W
R803	1-247-807-00	CARBON	100	5%	1/6W
R804	1-247-815-00	CARBON	220	5%	1/6W
R805	1-247-819-00	CARBON	330	5%	1/6W
R806	1-247-811-00	CARBON	150	5%	1/6W
R807	1-247-811-00	CARBON	150	5%	1/6W
R851	1-247-775-00	CARBON	4.7	5%	1/6W
R852	1-214-784-00	METAL	200K	1%	1/4W
R853	1-247-863-00	CARBON	22K	5%	1/6W
R854	1-247-799-00	CARBON	47	5%	1/6W
R901 ⚠	1-212-936-00	FUSIBLE	1.2	5%	1/2W F
R902	1-214-723-00	METAL	560	1%	1/4W
R903	1-214-771-00	METAL	56K	1%	1/4W
R904	1-214-741-00	METAL	3.3K	1%	1/4W
R905	1-214-863-00	METAL	910	1%	1/2W
R906	1-214-866-00	METAL	1.2K	1%	1/2W
R907	1-214-705-00	METAL	100	1%	1/4W
R908 ⚠	1-212-976-00	FUSIBLE	56	5%	1/2W F
R909	1-214-852-00	METAL	330	1%	1/2W
R921 ⚠	1-212-936-00	FUSIBLE	1.2	5%	1/2W F
R951 ⚠	1-212-936-00	FUSIBLE	1.2	5%	1/2W F
R952	1-214-723-00	METAL	560	1%	1/4W
R953	1-214-771-00	METAL	56K	1%	1/4W
R954	1-214-741-00	METAL	3.3K	1%	1/4W
R955	1-214-863-00	METAL	910	1%	1/2W
R956	1-214-866-00	METAL	1.2K	1%	1/2W
R957	1-214-705-00	METAL	100	1%	1/4W
R958 ⚠	1-212-976-00	FUSIBLE	56	5%	1/2W F
R959	1-214-852-00	METAL	330	1%	1/2W
R971 ⚠	1-212-936-00	FUSIBLE	1.2	5%	1/2W F
R981	1-214-824-11	METAL	22	1%	1/2W
R991 ⚠	1-217-383-00	FUSIBLE	4.7	5%	1/4W F
R992	1-247-835-00	CARBON	1.5K	5%	1/6W
R993	1-247-831-00	CARBON	1K	5%	1/6W
R994	1-247-843-00	CARBON	3.3K	5%	1/6W
R995	1-247-846-00	CARBON	4.3K	5%	1/6W
R996	1-247-855-00	CARBON	10K	5%	1/6W
R997	1-247-853-00	CARBON	8.2K	5%	1/6W
R998	1-247-885-00	CARBON	180K	5%	1/6W
R999	1-247-807-00	CARBON	100	5%	1/6W
RV301	1-230-674-11	RES, VAR, CARBON 20K/20K			
RV401	1-230-674-11	RES, VAR, CARBON 20K/20K			
RV501	1-226-703-00	RES, ADJ, METAL GLAZE 10K			
RV502	1-226-703-00	RES, ADJ, METAL GLAZE 10K			
RV601	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K			
RY351	1-515-547-11	RELAY			
RY352	1-515-547-11	RELAY			
S201 ⚠	1-553-318-00	SWITCH, PUSH (AC POWER)			
S301	1-554-421-00	SWITCH, SLIDE (TIMER)			
S401	1-570-100-11	SWITCH, SLIDE (PLAY MODE)			
S651	1-554-205-00	SWITCH, PUSH (CHUKING DET)			
S652	1-554-205-00	SWITCH, PUSH (DISK TABLE DET)			
S653	1-553-636-00	SWITCH, MICRO (MOTOR SELECT)			
S654	1-553-636-00	SWITCH, MICRO (CHUKING SWITCH)			
S655 ⚠	1-554-205-00	SWITCH, PUSH (LASER ON)			
S656 ⚠	1-554-205-00	SWITCH, PUSH (LASER ON)			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
S701	1-570-100-11	SWITCH, SLIDE (GIGITAL OUT)
S801	1-554-303-00	SWITCH, KEY BOARD (1)
S802	1-554-303-00	SWITCH, KEY BOARD (2)
S803	1-554-303-00	SWITCH, KEY BOARD (3)
S804	1-554-303-00	SWITCH, KEY BOARD (4)
S805	1-554-303-00	SWITCH, KEY BOARD (5)
S806	1-554-303-00	SWITCH, KEY BOARD (6)
S807	1-554-303-00	SWITCH, KEY BOARD (7)
S808	1-554-303-00	SWITCH, KEY BOARD (8)
S809	1-554-303-00	SWITCH, KEY BOARD (9)
S810	1-554-303-00	SWITCH, KEY BOARD (10)
S811	1-554-303-00	SWITCH, KEY BOARD (11)
S812	1-554-303-00	SWITCH, KEY BOARD (12)
S813	1-554-303-00	SWITCH, KEY BOARD (13)
S814	1-554-303-00	SWITCH, KEY BOARD (14)
S815	1-554-303-00	SWITCH, KEY BOARD (15)
S816	1-554-303-00	SWITCH, KEY BOARD (16)
S817	1-554-303-00	SWITCH, KEY BOARD (17)
S818	1-554-303-00	SWITCH, KEY BOARD (18)
S819	1-554-303-00	SWITCH, KEY BOARD (19)
S820	1-554-303-00	SWITCH, KEY BOARD (20)
S821	1-554-303-00	SWITCH, KEY BOARD (+10)
S822	1-554-303-00	SWITCH, KEY BOARD (0)
S823	1-554-303-00	SWITCH, KEY BOARD (CHECK)
S824	1-554-303-00	SWITCH, KEY BOARD (CLEAR)
S825	1-554-303-00	SWITCH, KEY BOARD (▶ PLAY)
S826	1-554-303-00	SWITCH, KEY BOARD (⏸ PAUSE)
S827	1-554-303-00	SWITCH, KEY BOARD (■ STOP)
S828	1-570-101-11	SWITCH, KEY BOARD (PROGRAM)
S829	1-570-101-31	SWITCH, KEY BOARD (SINGLE)
S830	1-570-101-21	SWITCH, KEY BOARD (CONTINUE)
S831	1-554-303-00	SWITCH, KEY BOARD (⏮)
S832	1-554-303-00	SWITCH, KEY BOARD (⏭)
S833	1-554-303-00	SWITCH, KEY BOARD (—)
S834	1-554-303-00	SWITCH, KEY BOARD (—)
S835	1-554-303-00	SWITCH, KEY BOARD (◀◀)
S836	1-554-303-00	SWITCH, KEY BOARD (▶▶)
S841	1-554-303-00	SWITCH, KEY BOARD (REPEAT)
S842	1-554-303-00	SWITCH, KEY BOARD (A-B)
S843	1-554-303-00	SWITCH, KEY BOARD (TIME)
S844	1-554-303-00	SWITCH, KEY BOARD (AUTO DELAY)
S845	1-554-303-00	SWITCH, KEY BOARD (SHUFFLE PLAY)
S846	1-554-303-00	SWITCH, KEY BOARD (OPEN/CLOSE)
T351	1-406-123-11	COIL (OSC)
T701	1-426-212-11	COIL (RF)
T901 ⚠	1-448-021-11	(AEP,UK)...TRANSFORMER, POWER
T901 ⚠	1-448-254-11	(US).....TRANSFORMER, POWER
X351	1-567-336-11	VIBRATOR, CRYSTAL
X701	1-527-532-00	OSCILLATOR, CERAMIC

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ACCESSORY & PACKING MATERIAL

Part No.	Decsription
1-556-942-00	CORD, CONNECTION
1-564-085-11	(UK)...PLUG AC
2-366-062-00	BAG, PROTECTION
3-304-973-00	SHEET, PROTECTION
3-701-630-00	BAG, POLYETHYLENE
3-703-079-21	(UK)...LABEL, CAUTION
3-703-390-01	(US)....INSTRUCTION
3-795-629-11	(AEP)...INSTRUCITON
3-760-189-11	(AEP,UK)...MANUAL, INSTRUCTION
3-760-653-21	(US).....MANUAL, INSTRUCTION
4-884-695-03	CLEANER, DISK
4-907-610-01	JOINT
4-908-441-01	CUSHION (RIGHT), UPPER
4-908-442-01	CUSHION (LEFT), UPPER
4-908-443-01	CUSHION, LOWER
4-908-966-01	INSULATOR
4-908-969-01	HOLDER, COMMANDER
4-908-970-01	SPACER
4-908-971-01	BOX, RECEIVE, INSULATOR
4-908-989-01	FOOT
4-908-994-01	(AEP,UK)...INDIVIDUAL CARTON
4-908-994-11	(US).....INDIVIDUAL CARTON